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MULTIPLE NEURITIS FOLLOWING CARBON MONOXID POISONING

A CLINICOPATHOLOGIC STUDY *

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In recent years, quite a number of contributions to the literature have appeared describing the changes in the central nervous system which result from carbon monoxid poison. The most constant of all these pathologic findings is bilateral softening of the globus pallidus. Cortical changes, while not nearly so common, have been described.[1] Multiple neuritis as a sequel to gas poisoning has been reported clinically, but satisfactory pathologic examination of the peripheral nerves is practically unknown. Starr,[2] Jelliffe and White,[3] Krantz,[4] Brissaud,[5] Lancereaux[6] and Glynn[7] have cited clinical cases of multiple neuritis secondary to carbon monoxid poisoning. Stewart[1] reported that the seventh and tenth nerves in a case of gas poisoning were intensely degenerated, this being especially true of the tenth. He did not examine nerves from the extremities.

Claude and Lhermitte[8] tried to produce multiple neuritis in dogs by the use of carbon monoxid. They found that they could produce small hemorrhagic areas in the cortex and in the cord, but the peripheral nerves remained intact. By the simultaneous use of another poison (diphtheria toxin), the peripheral nerves became involved. Claude and Lhermitte concluded that peripheral neuritis was not produced by carbon monoxid per se, but occurred only when another poison was used in conjunction with it.

Maczkowski[9] explained the cause of the neuritis from carbon monoxid poisoning as the result of trauma or blood extravasation, due to changes in the vessel walls, or to alteration of the chemistry of the blood.

Brissaud stated that this form of multiple neuritis is atypical because the deep reflexes are usually increased. While Brissaud did not give a reason for this, the increased reflexes are due, in all probability, to involvement of the globus pallidus or of the cortex or both.

Remak and Flatau[10] say that a typical multiple neuritis following carbon monoxid poisoning has not been described, although localized neuritis is not uncommon. An extensive bibliography is given in their article.

We report three cases, two with necropsy, of patients who had evidences of polyneuritis occurring as a sequel to gas poisoning.

REPORT OF CASES

CASE 1.—L. C., a woman, aged 54, brought to the Episcopal Hospital by the police, April 3, 1923, was unconscious, having been found stuporous in her room with the gas turned on. The length of time she was exposed to illuminating gas was unknown. She was well nourished and developed. She was perspiring freely, and was completely unconscious. Her cheeks were markedly flushed, and respiration was rapid and labored. The pupils were equal, round and regular, and widely dilated; they reacted poorly to light. Examination of the lungs showed numerous coarse râles throughout. The heart was enlarged; the rate was rapid, but the rhythm was regular, with accentuation of the second aortic sound. The deep reflexes were all present and active. Plantar stimulation produced an extension of the great toe on both sides, but the reflex was not atypical. The Babinski reflex, ankle clonus and Kernig's sign were not present.

A few days after admission, she improved and answered questions, but she was disoriented as to time and place. A week after admission, the right hand and forearm became cold and pale, and a pulsation could not be felt in either the radial or the brachial artery. Tenderness was present on squeezing the nerve trunks of the extremities, although the deep reflexes remained prompt. The condition of the right upper extremity progressed until the hand became blue and reddish purple. The patient became unconscious, April 13, and died the following day.

Transverse and longitudinal sections were studied from the ulnar, median, brachial plexus, plantar, popliteal and sciatic nerves on each side. These sections were stained by the Marchi method alone (Figs. 1 and 2), and also counterstained by the Alzheimer-Mann, Mallory-Jacob and Bielschowsky stains. Thin sections in paraffin were also stained with the Bielschowsky and Mallory-Jacob methods. The Marchi sections showed a marked increase of Elzholz bodies, which tended to localize, leaving portions of the nerve fiber free (Fig. 3). The medullary sheath was swollen and tumefied, showing in places large spaces (lücken) through which the intact axis cylinder could be seen passing (Fig. 4). Only rarely was there axis cylinder change, and when present it consisted of a slight fusiform swelling. No change was detected in the sheath nuclei. Despite the fact that the right axillary artery was thrombosed, the nerves from that extremity were not more involved than those from the opposite extremity. The nerves from the upper extremities were more involved than those from the lower limbs.

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1. Stewart, R. M.: J. Neurol. & Psychopath. **1–2**: 125, 1921.
2. Starr: Nervous Diseases Organic and Functional, Philadelphia, Lea & Febiger, 1913, p. 222.
3. Jelliffe, S. E., and White, W. A.: Diseases of the Nervous System, Lea and Febiger, Philadelphia, 1923.
4. Krantz, Joseph: Aus Aachen, Ludwig Maximilians Universität zu München, 1911.
5. Brissaud: Paralyses toxiques, Paris, Asselin & Houzeau, 1886, p. 138.
6. Lancereaux: Anatomie pathologique, Paris, Delahaye **3**: 358, 1889.
7. Glynn: Brit. M. J. **1**: 759, 1895.
8. Claude and Lhermitte: Compt. rend. Soc. de biol., Feb. **3**, 1912, p. 164.
9. Maczkowski: Neurol. Centralbl. **19**: 520, 1900.
10. Remak and Flatau, in Nothnagel: Spezielle Pathologie und Therapie **2**: 627, 1900.

In the spinal cord, no tract changes were present. The anterior horn cells were lessened in number and stained poorly (Fig. 5), and some of them showed axonal chromatolysis and lipoid accumulations (Fig. 6).

CASE 2.—A man, aged 68, admitted to the Philadelphia General Hospital, Jan. 28, 1924, had been found unconscious

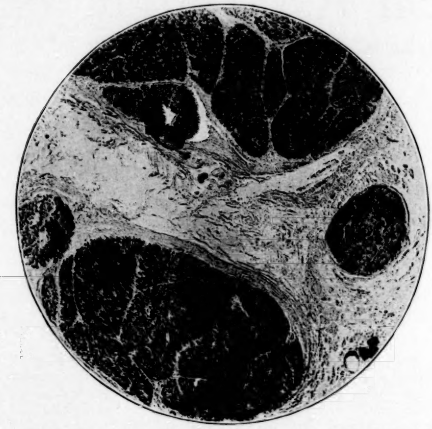

Fig. 1.—Transverse section of right median nerve, showing widespread involvement; Marchi stain.

in a small room heated by charcoal. He could not be aroused, and was taken to the hospital unconscious. He had an ischiorectal abscess for which he had been treated. His skin was cold and dry, with a cherry red tint. Respirations were labored and stertorous, and the breath had a sweetish, musty odor.

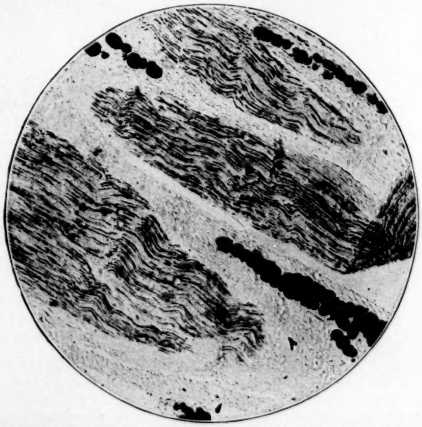

Fig. 2.—Longitudinal section of right external popliteal nerve showing marked degeneration; Marchi stain.

On admission, the lungs and heart presented no abnormality. Generalized muscular twitchings were noted; some involved the entire muscle, and others apparently only the muscle fiber. The bladder was distended almost to the umbilicus. Examination of the anal region revealed evidence of an ischiorectal abscess, which was draining freely. Shortly after admission, the man had an epileptiform attack, which was followed by coma. The pupils were small and reacted poorly to light. The nasal side of each disk was indistinct, and the veins were overfilled. All the deep reflexes were present and active without clonus, or Babinski's or Kernig's sign. All the extremities were moved, but apparently with difficulty. A marked degree of muscular rigidity was present; this was increased by passive movement.

The patient lived eleven days. During the last few days of his illness, the temperature ranged from 102 to 104, with greatly increased respiratory and cardiac rates; the cause of this condition was bronchopneumonia, which was the immediate cause of death. The right side became very rigid, whereas the left arm and leg presented spasticity and myoclonic movements identical to those seen in epidemic encephalitis.

Spinal puncture was performed; the fluid was negative on examination. Four days after his admission to the hospital, a swelling of the left knee joint developed; two days later, this was tapped and a purulent fluid obtained. Examination of the fluid showed no organisms, and a culture also was negative. A coagulum formed in the fluid, from which a

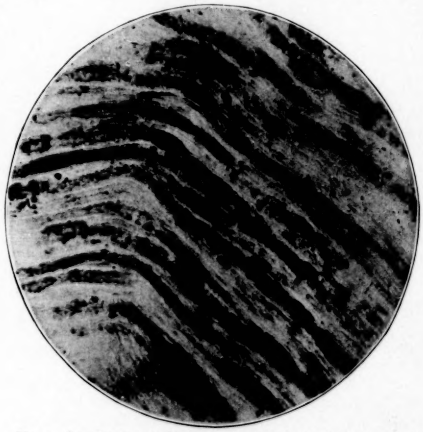

Fig. 3.—Same section as Figure 2 with higher magnification; Marchi stain.

smear showed a considerable number of degenerated cells, of which 70 per cent. were polymorphonuclears and the remainder lymphocytes.

On the fifth day of his illness, a note was made that the patient developed persistent hiccuping, and that the face was masked. Muscle rigidity persisted, and movements of the extremities produced pain.

Histologic examination of the peripheral nerves, spinal ganglions and muscles revealed that the pathologic changes in this case corresponded very closely to those seen in the preceding one, with the exception that there was not a uniform involvement of the peripheral nerves. In this case some were intensely degenerated, some moderately and others not at all. Marchi's stain showed an increase of Elzholz bodies. When counterstained with Mallory-Jacob and Alzheimer-Mann stains, the nerve fibers were seen to be swollen, but the axons suffered no great damage. Occasionally a nerve fiber with a vacuolated sheath was seen. Sections of the muscle showed no alteration.

Examination of the spinal ganglions showed but little change in the fibers entering and emerging, but the nerve cells themselves showed an increase of fat content.

CASE 3.—L. S., a blacksmith, aged 51, admitted to the Philadelphia General Hospital, March 18, 1919, had been overcome by illuminating gas, January 10, when a man in

the room next to his had committed suicide by gas and enough of the gas had entered the subject's room to render him unconscious. He had been taken to a nearby hospital, and regained consciousness in a few hours. He had been discharged the same day. A few days later, he began to have difficulty in swallowing, and food or liquids that did enter the stomach were promptly vomited. The vomiting ceased a week later, but the dysphagia persisted.

A week after he had been poisoned by gas, pain appeared in the feet and legs. The pain at first was of a burning character, and was increased by walking and by pressure.

On examination, the man lay in bed, groaning and moaning continuously. The lips, nose and ears were moderately cyanosed. The pupils were contracted, equal and regular, and reacted well to light and in convergence. The cranial nerves were normal except for a spasm of the motor fifths. The arms were moved freely in all directions, and showed a coarse tremor, which was not intensified by action. The biceps and triceps reflexes were present and exaggerated. There was tenderness on pressure over the nerve trunks and over the brachial plexuses. Movements of the lower extremities were performed normally, with the exception of extension of the

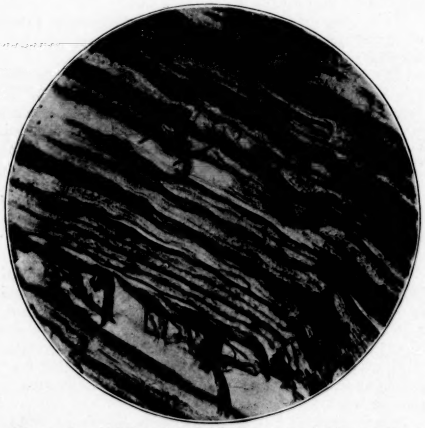

Fig. 4.—Longitudinal section of left ulnar nerve showing normal axis cylinders and swollen myelin sheaths; phagocytic cells within one fiber at *x*; Mallory-Jacob stain.

feet and toes. These movements were practically absent. The knee jerks were present and exaggerated; the Achilles jerks were absent. There was great tenderness on pressure over the nerve trunks of the lower extremities and on lateral squeezing of the feet. Plantar stimulation produced no response on either side. The arteries and heart were in good condition. The systolic blood pressure was 120; diastolic, 85. The chest was round and the lungs emphysematous. At the right apex there were signs of a limited, quiescent tuberculous condition.

A roentgen-ray examination of the esophagus and stomach to determine, if possible, the cause for the dysphagia and vomiting revealed the presence of cardiospasm.

The urine was normal with the exception of an occasional granular cast. The spinal fluid and blood presented no abnormalities.

During the first week of the man's stay in the hospital, he improved in a general way, although the polyneuritic state remained unchanged. A stomach tube was passed without trouble, showing that there was no obstruction. He could not swallow solid food, and lived entirely on milk and soup.

During the last three weeks of his life, he became progressively worse, and, owing to lack of sufficient food, he lost weight. The temperature, which was normal for ten days after admission, began to show a distinct upward trend, and toward the close was continuously above 101; the cause of the elevation was a bronchopneumonia, which may have been tuberculous, although tubercle bacilli were not found in the sputum on repeated examinations.

The upper and lower extremities became spastic, and at times were difficult to move. When the patient reached for

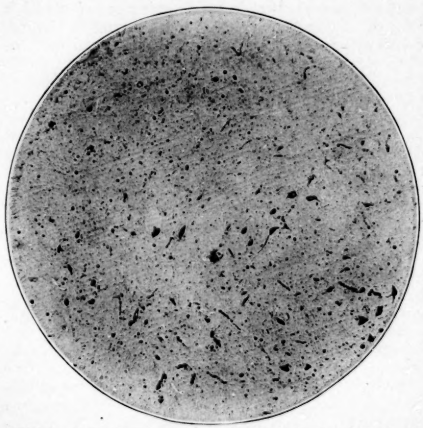

Fig. 5.—Anterior horn cells of lumbar cord showing diminution in number and poor staining qualities of cells; toluidin blue stain.

objects, a tremor developed. The tremor changed in character toward the close, and was of an intention type.

The face was expressionless, and at times the jaws could not be forcibly opened. The lower extremities were spastic

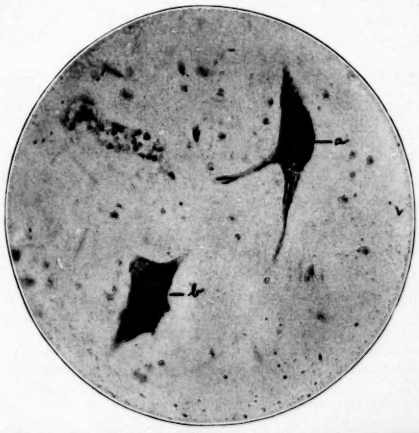

Fig. 6.—Two cells from anterior horns showing axonal chromatolysis at *a* and lipoid accumulation at *b*.

at the knees, and showed a flaccid paralysis of the feet, with exaggerated patellar and lost Achilles reflexes. The plantar reflexes were not present at any time of the patient's illness. The abdominal reflexes also were absent. The tenderness over the nerve trunks persisted, and toward the termination of the illness, when the man was difficult to arouse, pressure

over the large nerves produced discomfort and caused outbreaks of crying and moaning.

Two subsequent lumbar punctures were done. The fluid was acellular, contained no organisms, and showed a negative Wassermann reaction. Death occurred, April 16. No necropsy was obtained.

COMMENT

These patients had clinical evidence of multiple neuritis, although the picture was unusual in that the deep reflexes were increased. The exaggeration of the deep reflexes, as we have stated above, is due in all probability to the involvement of the globus pallidus or of the cortex or of both. The person who has a combination of conditions—disease of the basal ganglions or cortex and of the peripheral nerves—will show either no alteration or an exaggeration of the deep reflexes, unless the peripheral nerves are greatly affected. We may mention, as analogous conditions, the increase of the deep reflexes in alcoholic multiple neuritis, in which there is in addition cerebral involvement, also the increase of the deep reflexes in disease of the spinal cord, in which the pyramidal tracts are involved in conjunction with disease of the anterior horns or of the posterior columns. In Case 3, in which unfortunately no necropsy was obtained, a paradoxic condition was found in that there was spasticity and increase of the deep reflexes at the knees, while at the ankles flaccidity and lost reflexes were found. In Case 1 the changes in the peripheral nerves were distinct; in Case 2 the findings were distinct, but not so pronounced. We believe that multiple neuritis occurring as a sequel to carbon monoxid poison is probably much more frequent than is commonly believed, yet direct pathologic evidence of such an involvement is practically unknown in the literature. The peripheral nerves are not often removed at necropsy, and this is probably why changes in these parts are not more frequently discussed.

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REFLUX OF BILE UP THE DUCT OF WIRSUNG CAUSED BY AN IMPACTED BILIARY CALCULUS

AN ANATOMIC STUDY CONCERNING ITS POSSIBILITY

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A cursory review of the literature on acute pancreatitis is sufficient to impress on one that there is a striking lack of agreement among investigators concerning the question of etiology. That this is true, in respect to many possible factors, is not to be wondered at in view of the difficulties encountered on investigation. However, when the question at issue is one of gross anatomy, it does seem incredible that there should be a marked disagreement. Nevertheless, such is the case, as will be shown presently.

Through the pioneer work of Opie [1] and many subsequent investigators, sufficient reliable evidence has been accumulated to warrant one in suspecting that a reflux of infected bile up the pancreatic duct or a conversion of the biliary and pancreatic ducts into a common and freely communicating system, in the presence of infected bile, may lead to acute pancreatitis. As a matter of fact, few, if any, doubt that this is the true explanation of some of the reported cases.

It has been conclusively demonstrated in clinical cases of acute pancreatitis that a reflux of bile up the pancreatic duct did occur, and that it was due to a biliary calculus lodged in the ampulla of Vater. Therefore, the relation between the duodenal extremities of the ductus pancreaticus and the ductus choledochus has attained considerable importance. The work of Archibald [2] has aroused further interest in this question.

In this paper, we have concerned ourselves primarily with the relation between these two ducts in case of an impacted biliary calculus in the duodenal orifice of the common duct. We have attempted to determine the approximate percentage of persons in whom it is anatomically possible for a biliary calculus to become so lodged that it will convert these ducts into a freely communicating system.

This is the question, already referred to, which is one of gross anatomy and concerning which prominent medical writers are in disagreement.

The first thing to be determined in a solution of this problem is the approximate percentage of persons in whom the ductus pancreaticus and ductus choledochus communicate with the duodenum by a common channel, the ampulla of Vater. We are interested here in other possible relations between these two ducts only so far as their percentage of occurrence is concerned.

Practically all old as well as modern textbooks of anatomy describe these two ducts as usually uniting to form a common channel at their duodenal extremities; for example, Sappey [3] states that "this arrangement is the one which is observed in the very great majority of cases." One of the few exceptions to this view is found in the frequently quoted work of Letulle and Nattan-Larrier,[4] who found on examination of twenty-one cadavers, that a common channel occurred in only eight, or about 38 per cent. It is apparent, however, that conclusions are unwarranted which are basd on so small a number of cases.

More recently Ruge,[5] Opie [6] and Baldwin [7] have investigated this question. Ruge found a common channel present in thirty-two of the forty-three cadavers examined, or in about 75 per cent.; Opie in eighty-nine out of 100, or in 89 per cent., and Baldwin in seventy out of ninety, or in about 78 per cent.

It should be emphasized that confusion as to whether a common channel or merely a common orifice was present may have arisen at times in some of these investigations. Thus, Opie refers to the long diameter of the ampulla as varying from 0 to 11 mm. This statement is obviously incorrect, since there can be no ampulla with a length of 0 mm. It is a question whether a common channel should be considered present in cases in which the septum of the two ducts extends within less than 2 mm. of the summit of the papilla of Vater (Fig. 3 *b*).

1. Opie, E. L.: The Etiology of Acute Hemorrhagic Pancreatitis, Bull. Johns Hopkins Hosp. **12**: 182 (April, May, June) 1901.

2. Archibald, E.: The Experimental Production of Pancreatitis in Animals as the Result of the Resistance of the Common Duct Sphincter, Surg., Gynec. & Obst. **28**: 529 (June) 1919.

3. Sappey, C.: Traité d'anatomie descriptive **4**: 272-273, 1889.

4. Letulle, M., and Nattan-Larrier: Region vaterienne du duodenum et ampoule de Vater, Bull. Soc. anat. de Paris **12**: 491 (June) 1898.

5. Ruge, Ernst: Beitrage zür chirurgischen Anatomie der grossen Gallenwege, Arch. f. klin. Chir. **87**: 47, 1908.

6. Opie, E. L.: Disease of the Pancreas, Ed. 2, 1910, p. 15.

7. Baldwin, W. M.: The Pancreatic Ducts in Man, Together with a Study of the Microscopical Structure of the Minor Duodenal Papilla, Anat. Rec. **5**: 197 (May) 1911.

The total number of cases examined in these four series was 254; an ampulla or common channel was found to be present in 199, or in about 78 per cent. In our own series of 100 cases, which will be considered more fully farther on, a common channel was present in 74 per cent.

In view of these facts, it is somewhat surprising that only recently Mann and Giordano [8] found a common channel present in only 20 per cent. of 200 cases examined. As already shown, this is at absolute variance with the most extensive works on this subject. The evidence available is convincing that an ampulla of Vater, or a common channel, is present in approximately 75 per cent. of persons.

Opie [6] pointed out, years ago, that the presence of a common channel does not mean necessarily that the ductus pancreaticus and ductus choledochus can be converted into a common and freely communicating system by an impacted biliary calculus. He stated that in order for this to take place "it is necessary that the diverticulum of Vater be capacious, with a length at least greater than the diameter of its duodenal orifice"; and on examination of 100 specimens, he found that in twenty-one instances the diameter of the orifice was equal to or greater than the length of the diverticulum. He concluded that in these twenty-one cases "It is obviously impossible that a calculus, assuming it to be approximately spherical and lodged in the orifice, could only partially occlude the cavity." Thus, by means of careful measurements of the ampulla of Vater, Opie was the first to attempt a solution of this question. Practically all subsequent discussions and investigations on this subject have been based on Opie's work or methods of investigation.

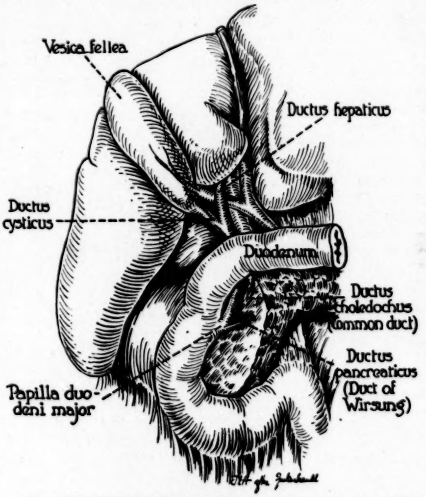

Fig. 1. (modified from Zuckerkandl).—A sufficient amount of the anterior part of the head of the pancreas has been removed to expose the common and pancreatic ducts, which unite to form the ampulla of Vater. This relation prevails in approximately 75 per cent. of persons.

Moynihan [9] says that:

The actual size of the diverticulum and of its opening upon the surface of the duodenum are of great importance from a surgical standpoint, for if the diameter of the opening, for example, be 3 mm. and a calculus 4 mm. in diameter reaches the ampulla from the common duct, it may block the duodenal orifice, being unable to pass, and will, therefore, convert the common bile duct and the pancreatic duct into a common closed channel.

According to Osler: [10]

In only a limited number of individuals is the anatomic structure of the diverticulum of Vater such that a calculus could convert the two ducts into a continuous closed channel. . . . In only thirty-two of 100 normal specimens which have been examined was the diverticulum of Vater of such a size that a small calculus might occlude the orifice without completely filling it and thus obstructing one or both ducts which enter it.

In a recent report Judd [11] states that:

The relation of the common bile duct to the pancreatic duct was studied in 170 necropsies for the purpose of determining the percentage of instances in which the anatomic arrangement was such that it would be possible to convert the two ducts into one continuous passageway. This seemed a possibility in only 4.5 per cent.

He concludes that:

Only very exceptionally is there an anatomic arrangement whereby the ducts can be converted, either by a stone or by the action of the sphincter, into a continuous passageway permitting bile to flow from the common duct into the pancreatic duct.

Mann and Giordano examined formaldehyd fixed specimens of tissue obtained from 200 consecutive necropsies. Their technic consisted of simple dissection and measuring the diameter of the ampulla and its duodenal orifice. They say that:

It is evident that the common bile duct and the pancreatic duct could be converted into a continuous channel by a blockage of the exit of the ampulla only in Group 3, in which the two ducts drain into the duodenum through a common opening; and even in this group the process can only be brought about in cases in which the pancreatic duct empties into the ampulla at a greater distance from the exit than the diameter of the common opening. The average diameter of the ampulla is from 2.5 to 3.5 mm. Thus, a calculus must be 4 mm. in diameter before it can cause obstruction, except in rare instances. A calculus 2 mm. or less in diameter may obstruct, but eventually it will force its way through. It is common experience to find gallstones larger than this in the duodenum. It should also be noted that the dimensions of the ampulla and the ducts entering it are often such that a calculus which would become impacted would obstruct both ducts and not convert them into a continuous channel. Of the 20 per cent. of our specimens in which the two ducts entered together, in twenty-eight instances (14 per cent.) the opening of the duct of Wirsung was 3 mm. from the apex and in five (2.5 per cent.) 4 mm. from the apex. In these instances, reflux of bile into the pancreatic duct because of obstruction would not be possible. This leaves a total of 3.5 per cent. of cases in which it would be anatomically possible for obstruction of the exit of the ampulla to convert the two ducts into a continuous channel and allow bile to pass into the pancreatic duct.

From this excerpt, it will be seen that the method of investigation employed by Mann and Giordano is analogous to that of Opie, and that their argument is the same. However, their results are far different. In

8. Mann, F. C., and Giordano, A. S.: The Bile Factor in Pancreatitis, Arch. Surg. **6**: 1 (Jan.) 1923.
9. Moynihan, B. G. A.: Gallstones and Their Surgical Treatment, 1904, p. 27.
10. Osler, William: Osler's Modern Medicine **5**: 637, 1908.
11. Judd, E. S.: Relation of the Liver and the Pancreas to Infection of the Gallbladder, J. A. M. A. **77**: 197 (July 16) 1921.

spite of this, an editorial writer,[12] in commenting on the work of Mann and Giordano, did not hesitate to make this sweeping statement: "The data conclusively prove that the number of instances in which the anatomic arrangement in the relationship of the two ducts would permit bile to pass into the pancreatic duct is very small."

Before conducting any investigations ourselves, we felt that this comment was unwarranted because of certain obviously just criticisms of the work and conclusions of these authors. This impression has been substantiated subsequently by the experience and findings obtained from our own work. It seems quite fallacious for Mann and Giordano to assume, as they evidently do, that the measurements they took of the ampulla of Vater were accurate enough to warrant deductions based on differences of a millimeter or less. Even though these recorded differences amounted to 3 mm. or more, their conclusions would be unwarranted, since the limits of error in taking these measurements often amount to 3 mm. or more. Sharply defined points between which to measure are the exception and not the rule. This is particularly true in case one is dealing with an obliquely placed, slitlike duodenal orifice of an ampulla in which there is a difference of 3 mm. or more between the shortest and greatest long diameters as measured from the margin of the orifice.

The inaccuracy of these measurements is evidenced by the fact that marked variations in the recorded diameters are found in the reports of the most reliable authorities. Thus, Sappey gives the long diameter of the ampulla of Vater as from 7 to 8 mm., and the short diameter as from 5 to 6 mm. when the cavity is moderately distended. According to Testut, these diameters are from 6 to 7 mm. and from 4 to 5 mm., respectively.

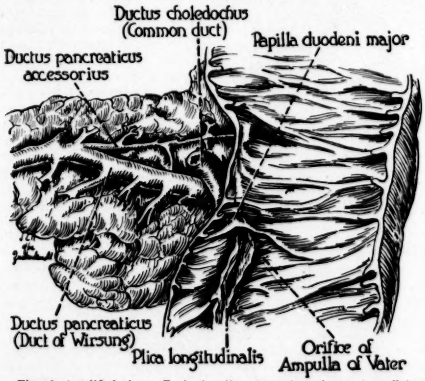

Fig. 2 (modified from Zuckerkandl).—Posterior view: A sufficient amount of the pancreas has been removed to show the ducts; the prominent papilla duodeni major, containing the greater part of the ampulla of Vater is well shown.

Opie found the long diameter to vary from 0 to 11 mm. in 100 specimens, its average being 3.9 mm. In thirty instances it reached 5 mm. Mann and Giordano found the long diameter in their forty specimens to be 3 mm. in twenty-eight, and 4 mm. in five.

Another criticism of their work is the assumption that an impacted biliary calculus is approximately spherical, an assumption that Opie first made in premising his arguments and conclusions. As a matter of fact, irregularly shaped biliary calculi are encountered much oftener than approximately spherical ones. And since the shape of an impacted calculus may be a determining factor so far as a reflux of bile is concerned, the assumption mentioned above is unjustified.

A considerable part of an irregularly shaped, impacted calculus may project through the orifice of the ampulla into the duodenum. Its actual length may exceed that of the ampulla and yet a reflux of bile will occur up the duct of Wirsung, owing to the fact that a considerable part protrudes outside the diverticulum (Fig. 3 *d*).

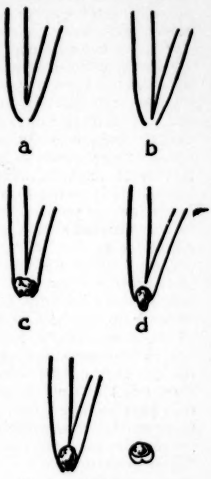

Fig. 3.—Five sketches of the duodenal extremities of the common and pancreatic ducts: *a*, usual arrangement of the two ducts with a definite ampulla of Vater present; *b*, a type in which it is merely a matter of definition as to whether an ampulla actually exists, since the septum between the two ducts extends nearly to the common duodenal orifice; *c*, orifice of the ampulla completely obstructed by a biliary calculus, with a conversion of the two ducts into a common and freely communicating system; *d*, elongated biliary calculus lodged in the orifice of the ampulla, the long diameter of which is less than that of the calculus (a communication exists between the two ducts, however, owing to the fact that a considerable part of the calculus projects into the duodenum); *e*, an ampulla of Vater completely filled by a calculus so far as its long diameter is concerned; however, as the smaller of the two sketches, which is a cross-section of the ampulla containing the calculus, shows the distended ampulla is not completely filled by the irregular calculus, and a communication between the two ducts exists around the latter.

It is true, furthermore, that the greatest diameter of an impacted calculus may equal the long diameter of the ampulla in which it is wholly contained, with still a communication existing between the common and pancreatic ducts, owing to failure of the irregularly shaped calculus to fill completely the cavity of the ampulla (Fig. 3 *e*). The latter may be dilated, a factor which may be a determining one, but which is not considered by Mann and Giordano.

In neither of the two possibilities that have just been cited would a reflux of bile be possible according to the argument of these two writers, when, as a matter of fact, it would actually occur.

Their reasoning, based on average measurements, is open to criticism because an average diameter may never actually occur in a single case; this is to be emphasized particularly when two or more average diameters are involved.

In view of these criticisms and of our experience in employing the methods of investigation described, we feel that a correct answer to the question at issue cannot be obtained through such simple and apparently convincing mathematical calculations as have been employed.

Because of this, we have resorted to another method of investigation, which we consider to be the simplest, most logical and also the most accurate of any heretofore carried out or suggested. It consists in artificially impacting a selected biliary calculus in the ampulla of Vater of a necropsy specimen, and then determining

12. The Bile and Pancreatitis, editorial, J. A. M. A. **78**: 326 (Feb. 3) 1923.

whether a reflux of bile can take place up the duct of Wirsung by actual test.

The calculus is selected, so far as size is concerned, with reference to the sizes of the common duct and the duodenal orifice of the ampulla of Vater. Usually one is able to select a calculus which will strip down the common duct readily, and which will, at the same time, become firmly lodged in the narrow orifice of the ampulla.

Once impaction has occurred, it can be determined definitely and very readily whether a communication exists between the biliary and the pancreatic ducts by forcing bile or water down the common duct, and observing whether it escapes by way of the pancreatic duct.

This procedure was carried out on seventy-four adult human specimens out of 100 examined at necropsy. As previously stated, in twenty-six of these specimens no ampulla was present. The examinations were usually made on the same day as the necropsy. In case of delay, the specimens were preserved on ice. No chemical fixatives were employed. These specimens were obtained by removing, in one mass, at necropsy, the portions of the liver, pancreas and duodenum necessary to insure the intact biliary and pancreatic duct system that we needed for our work.

The extrahepatic biliary ducts and the terminal 6 or 7 cm. of the duct of Wirsung were thoroughly exposed by simple dissection. The orifice of the ampulla of Vater was exposed by opening the duodenum. A selected biliary calculus was introduced into the hepatic duct. It was stripped down the common duct and into the ampulla, where it became lodged at the duodenal orifice. The hepatic duct was then connected with a reservoir of water that could be elevated to any desired height. A mercury manometer was also connected with the reservoir of water. A pressure of less than 100 mm. of water was then brought to bear on the hepatic duct, and, at the same time, a determination was made as to whether or not water flowed from the duct of Wirsung. In case it did, a pressure of 1,800 mm. of water was brought to bear on the duct system, to insure that the calculus was fairly well lodged in the ampulla. If it was forced out, a failure was recorded, provided the outcome was the same with larger calculi.

Casts were obtained of the ducts in those specimens in which a reflux of bile was possible by pouring Wood's metal into the common duct. It ran up the duct of Wirsung and hardened almost immediately. This procedure fixed the ampulla in a moderately distended condition. When the cast was exposed the points between which to measure in order to determine the length of the ampulla were sharply defined in most instances. Dissection could not alter them, as a rule. We always measured the shortest possible distance for the long diameter of the ampulla.

It was necessary to desiccate the duct system by means of a current of warm air, preliminary to pouring the Wood's metal, to prevent marked shrinkage of the tissues. The metal was poured at a temperature of 180 C.

As already stated, the calculi were carefully selected, heed being taken of the size of the common duct and its duodenal orifice. Irregular calculi were used oftenest. Not infrequently, a part of the calculus protruded into the duodenum, just as has happened in actual clinical cases of acute pancreatitis. We were satisfied in all but five or six cases that the calculi were so firmly lodged in the ampulla that they could not be passed readily in the living state, if at all. The pressure of less than 100 mm. of water was used to determine the existence of a communication between the two ducts. Higher pressures were purposely avoided to obviate possible criticism.

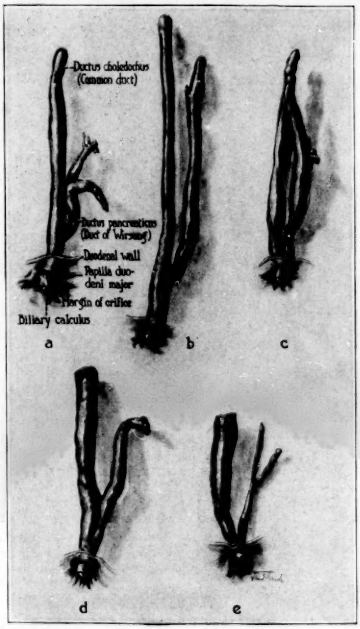

Fig. 4.—Five of the sixty-six Wood's metal casts made with a calculus impacted in the orifice of the ampulla of Vater. The papilla duodeni major, together with a little of the surrounding duodenum, has been left undisturbed. The superior and inferior limits of the ampulla are clearly defined in each specimen. The superior limit is the junction of the common and hepatic ducts, and the lower limit is the margin of the duodenal orifice of the ampulla of Vater, which is seen stretched over the presenting tip of the impacted calculus.

It was not necessary that we record any measurements in these determinations; however, we did record, in most instances, the three greatest diameters of the calculi used and the long diameter of the ampullae. The latter lengths are too short, if anything, owing to avoidable shrinkage from the heated Wood's metal.

We found in the 100 specimens examined that a common channel or ampulla of Vater was present in seventy-four. In eight of these seventy-four, the size of the duodenal orifice of the ampulla was so great and its length so short that it was impossible to convert the two ducts into a common system by means of an impacted calculus. In the remaining sixty-six, however, this was possible. Therefore, in 66 per cent. of the 100 specimens, it was anatomically possible for the ductus choledochus and the ductus pancreaticus to be converted into a single system by an impacted biliary calculus. This finding contrasts markedly with Judd's 4.5 per cent. in 170 cases, and Mann and Giordano's 3.5 per cent. in 200 cases.

The length of the common channel or ampulla of Vater was measured in sixty of these sixty-six specimens, with the following results:

In 48 specimens it measured 5 mm. or more.
In 40 specimens it measured 6 mm. or more.

In 28 specimens it measured 7 mm. or more.
In 15 specimens it measured 8 mm. or more.
In 9 specimens it measured 9 mm. or more.
In 4 specimens it measured 11 mm. or more.
In 7 specimens it measured 10 mm. or more.
In 2 specimens it measured 12.5 and 13 mm., respectively.

The average length for these sixty specimens is 6.7 mm. As already stated, these measurements are too short in many instances, owing to the shrinkage caused by the hot Wood's metal.

CONCLUSIONS

1. An ampulla of Vater is present in approximately 75 per cent. of persons.
2. It is anatomically possible for a biliary calculus, lodged in the ampulla of Vater, to cause a reflux of bile up the duct of Wirsung in approximately 65 per cent. of persons.

PRIMARY ACTINOMYCOSIS OF THE KIDNEY

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This case is reported because primary actinomycosis of the kidney is rare.

Mrs. H. L., white, a resident of Chicago for forty-three years, entered the Presbyterian Hospital, Jan. 6, 1922, because of pain above the "left hip" radiating into the left thigh; anorexia, and general weakness. The symptoms were of two or three months' duration. Since November, 1921, she had lost 46 pounds (21 kg.). The symptoms were becoming progressively worse.

Fig. 1.—Macroscopic appearance of kidney when divided longitudinally: The kidney surface had a yellowish appearance and the normal markings seemed to be replaced by yellowish fibrous tissues; no abscesses were found.

There was nothing in the previous history that had any bearing on the case.

The patient was small, emaciated and anemic. The general examination was negative except for a mass which could be felt in the left hypochondrium. This mass could be felt as well in front as behind. It was hard, fairly regular in outline, fixed and somewhat tender. The muscles lying over the mass posteriorly were tense; apparently this was due to muscular defense. The temperature, reaching as high as 100 or 101 F. each afternoon, was intermittent in type.

An examination of the urine revealed considerable albumin, many leukocytes and leukocytic casts. The specific gravity was 1.020. Red cells were found at times, and the centrifugated sediment gave a positive benzidin test. Cultures of catheterized specimens revealed colon bacilli. In one catheterized specimen, 420 leukocytes and 40 red cells were found in a cubic millimeter.

Dr. Kretschmer made an examination, January 19. He passed ureteral catheters, and a pyelogram of the left kidney was made. The bladder mucous membrane was pale, the ureteral openings normal. The ureteral catheters passed easily. Urine from the bladder contained 40 cells; from the right ureter, 50; from the left, 60. The left pyelogram showed little solution. The amount present showed a "spider leg" deformity of the renal pelvis and calices. The upper calix was larger than the rest, and clubbed. The renal pelvis lay between the first and fourth lumbar vertebrae. There was some dilatation of the ureter on the left side.

A fluoroscopic examination of the chest showed no gross abnormalities. No films were made. The physical findings did not reveal any marked changes in the lungs, and, as first stated, none were seen on fluoroscopic examination. A probable diagnosis of hypernephroma of the left kidney was made.

The patient was transferred to the surgical service of Dr. Dean Lewis, and an operation was performed, January 30. The left kidney, when exposed, was found to be greatly and uniformly enlarged. The kidney, extending well up toward the diaphragm, was firmly attached to the muscles of the posterior abdominal wall and to the vertebrae. The lower pole extended down into the pelvis. The kidney was punctured with a needle. It was very hard in consistency. No pus could be found. Some of the infiltrated perirenal fat was removed for examination. The wound was but partially closed, some of the kidney being left exposed so that roentgen-ray treatments could be given subsequently.

The patient grew gradually worse. The temperature remained normal from April 6 until death, which occurred May 13.

A postmortem examination, conducted by Dr. Oberhelman, revealed an enormously enlarged left kidney and an abscess involving the muscles of the posterior abdominal wall and the fourth lumbar vertebra, which cut easily with a knife. This inflammatory process also involved the greater part of the body of the fifth lumbar vertebra. The destruction of these two vertebrae was so marked that there was excessive mobility of the spine at this point. The inflammatory process extended to the spinal canal at the levels just mentioned and involved the dura externally.

The other findings were negative with the exception of the lungs. The right lung inflated fairly easily, collapsed readily, and crepitated throughout. On the cut surface it was smooth and shiny. Some small, slightly raised, hard nodules were seen. These varied in size, some being as large as 3 mm. in diameter. Some of these nodules had a grayish white, jelly-like appearance, and contained white granules.

The kidney, on section, had a peculiar yellowish appearance; apparently fibrous tissue radiated out through the substance. The appearance was decidedly peculiar. A microscopic examination revealed large numbers of ray fungi in the granulation tissue in the kidney.

The anatomic diagnosis was: (1) primary actinomycosis of the left kidney; (2) small actinomycotic abscesses of the lungs; (3) extensive suppurative necrosis of the fourth and fifth lumbar vertebrae (actinomycotic); (4) extensive left sided psoas and retroperitoneal abscess; (5) generalized fibrinopurulent peritonitis; (6) double ureter and renal pelvis (left).

Israel, in 1889, described the first case of primary actinomycosis of the kidney. No other focus was found in this case, and the patient was well eleven years after the kidney was removed. In 1910, Israel reported another case occurring in a farmer, aged 60. The disease began with fever, a cough, and pain in the region of the twelfth rib on the left side. The cough subsided after five weeks, but the fever, remittent and intermittent in type, persisted. Tenderness, and later some edema, were noted over the left twelfth rib. A diag-

nosis of suppurative perinephritis was made, but when nephrectomy was performed, actinomycosis of the kidney with a perinephritic abscess was found.

Up to 1918, only five other cases of primary actinomycosis had been reported—by Neumann, Earl, Stanton, Cohn and Poncet. In Earl's case a secondary brain abscess was found at necropsy. In the case reported by Stanton, the disease occurring in a man, aged 53, and presenting the clinical picture of pyelonephritis and cystitis, the lesions were limited to the

Fig. 2.—Colonies of ray fungi in substance of the kidney; these were present in large number.

kidney and bladder. Neumann's patient was a boy, aged 4½ years. A mass appeared in the left groin. This softened and was incised several times, but a sinus remained. There was some disturbance of bladder function, and the urine contained blood, albumin and pus. Induration was later noted posteriorly in the region of the right kidney. Later this softened and pus was discharged, a sinus remaining. No other foci of actinomycosis were found. The patient was well eleven months after operation. Actinomyces were demonstrated microscopically in the pus.

I believe that the lesion is primary in the kidney in this case for the following reasons: The largest and most advanced focus is found in the kidney; the urinary findings and pain referable to the kidney were the most prominent symptoms in the early history; the small foci in the lung were apparently hematogenous in origin and secondary. There must have been a portal of entry, but the disease attained its greatest development in the kidney, and the symptoms and signs associated with its development in this organ dominated the picture.

122 South Michigan Avenue.

The Bugaboo of High Blood Pressure.—Patients should be made to realize that physicians are coming to a better understanding of the problem, and that they are gradually getting away from the bugaboo of high blood pressure as an entity. May the day soon pass when patients are told that their blood pressures are high, and may they be made to believe that the hypertension phase of their malady is no more important than other aspects of a generalized disturbance not perhaps apparent to them.—W. J. Stone: *California State J. M.* **21**:51 (Dec.) 1923.

PAPILLARY EPITHELIOMA OF THE KIDNEY PELVIS

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AND
JOSEPH FELSEN, M.D.
NEW YORK

At the New Orleans session of the American Medical Association, in 1920, McCown [1] reported a case of papillomatous epithelioma of the kidney pelvis. He also reviewed forty-seven cases that he had compiled from American and foreign literature, and gave a short abstract of the history and findings in forty-six of these cases. In the ensuing discussion three other cases were reported, and attention was drawn to the important points in the diagnosis and treatment of this condition. Owing to the rarity of this tumor, most authors report only one case each. An exception to this is furnished by Kretschmer with two cases and the Mayo Clinic with five cases. Since 1920, two more cases have been reported, one by McGlannan,[2] and the other by Miller and Herbst.[3] Scholl [4] has presented the condition in a recent article accompanied by illustrations and a complete bibliography. He reports eight cases, which probably include the five mentioned above as being reported from the Mayo Clinic.

To McCown belongs the credit of having made a collective study of the histories of most of the reported cases, which enabled him to give us cetrain definite data regarding the usual symptoms and course of the disease, together with the physical and pathologic findings. The conclusions he has reached, supported by the observations and experience of other American surgeons, will in future make it possible to reach a diagnosis of this condition with reasonable certainty. Both McCown and Braasch have emphasized the fact that, though most of these tumors are originally benign, they

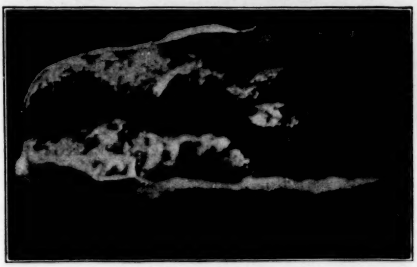

Fig. 1.—Extensive involvement of kidney by papillary epithelioma.

soon become malignant, and they therefore advise a nephrectomy and a complete ureterectomy.

Our case is a typical one, in regard not only to the symptoms and course, but also to the physical findings and the pathology.

REPORT OF CASE

History.—Capt. P. H., aged 58, admitted to U. S. Public Health Service Hospital No. 38, April 15, 1920, complained

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2. McGlannan, Alexius: Ann. Surg. **73**: 210 (March) 1921.
3. Miller, E. M., and Herbst, R. H.: Papillary Epithelioma of the Kidney Pelvis, J. A. M. A. **76**: 918 (April 2) 1921.
4. Scholl, A. J.: Surg., Gynec. & Obst. **38**: 186 (Feb.) 1924.

chiefly of hematuria and weakness. He had first noticed blood in the urine in March, 1919, which in the beginning appeared in only a small quantity. Gradually, the amount increased and he became weak. He never had severe pain, but when passing clots of blood he had some pain in the left side, and difficulty in urinating. There was increased frequency of urination, especially at night. Lately he had had attacks of dizziness. There was no history of venereal disease. The patient had been married seventeen years. There were no children. He had never been seriously ill.

The patient was large, adipose and anemic, with flabby musculature. He was slightly dyspneic. Examination failed to reveal any constitutional disease. The abdomen was large and pendulous. Palpation over the kidney region was unsatisfactory on account of the thick walls. Neither kidney was palpable, and there was no tenderness or rigidity over the costophrenic angles. The bladder was apparently empty. Rectal examination showed a somewhat enlarged, soft prostate. The external genitals were normal. Urine was passed in normal quantity, without distress. It contained considerable blood and small blood clots, and showed a heavy trace of albumin, but no sugar. Microscopic examination showed

Fig. 2.—General structure of stalks giving the tumor its characteristic appearance; the fine connective tissue stroma and the arrangement of epithelial cells at right angles to it may be noted.

so many red blood cells that all other elements were covered. No pus, casts or unusual epithelium was noted. Blood examination revealed: hemoglobin, 70 per cent.; leukocytes, 7,200; erythrocytes, 4,480,000; polymorphonuclears, 72 per cent.; small lymphocytes, 25 per cent.; basophils, 2 per cent.; eosinophils, 1 per cent. Roentgen-ray examination was negative for stone. A cystoscopy was done by Dr. L. B. Kingery. The instrument was easily introduced and showed normal bladder capacity and a normal wall. No tumor or tubercle was noted. Both ureter openings were normal. The catheter entered the right ureter easily and showed clear urine, while on the left side an obstruction was met about 3 inches from the bladder, and pure blood was obtained. A functional test showed phenolsulphonephthalein excretion from the right kidney six minutes after injection, while on the left side there was no color change after twenty minutes.

The history of long standing hematuria without much pain, the negative roentgen-ray findings, the excretion of pure blood from the left side, and the marked reduction of kidney function led us to make a diagnosis of kidney tumor.

May 7, through an oblique incision, the kidney was exposed; it did not seem enlarged, and was easily freed. It looked diseased, and a tumor was palpable in its pelvis. Nephrectomy was done in the usual way; also about 1 inch of the ureter was removed; one cigaret drain was introduced, and the wound was closed. The drain was removed after forty-eight hours, and the wound healed by primary union. On account of his weak condition, the patient was kept in bed three weeks and was then sent home with instructions to return in a few months.

November 10, the patient was readmitted, complaining of weakness. He had been unable to work continuously as a result of it. Occasionally he had a catch in the left side of the chest. Urination had been normal except for some increased frequency, probably due to the enlarged prostate. There had been no hematuria since operation.

The patient looked well. Examination failed to reveal any cause for weakness except a persistence of the anemia due to the former hematuria. A roentgenogram of the chest was negative. The scar was well healed, and the abdomen normal. The urine was clear and showed neither albumin nor sugar. A few pus cells were present, but no red blood cells. Cystoscopy showed no tumor implants or other abnormality except an enlarged prostate. On account of the frequent recurrence of this type of tumor in the bladder or ureter, a complete ureterectomy was decided on, and after building up the patient, we performed this operation, December 10. The lower part of the old scar was reopened, and the incision was extended downward and forward parallel to Poupart's ligament. The ureter was easily exposed extraperitoneally. It looked normal and separated without difficulty. The upper end, which was closed, had tapered to a fine point, and was firmly embedded in scar tissue. There was no sign of recurrence. It was freed down to the bladder and completely extirpated. One cigaret drain was placed in the pelvis and the wound then closed. The drain was removed two days later, and the wound healed by primary union. Recovery was rapid, and the patient was discharged cured.

Pathologic Report.—The left kidney measured 5 by 9.5 cm. and weighed 106 gm. The surface was rather rough, owing to numerous knoblike irregularities in contour. Near the upper pole were several small cortical cysts filled with clear fluid. An irregular, purplish red mottling was visible over the entire surface. Projecting through the ureteral stump were small, compressed, villous stalks appearing not unlike a bunch of celery. On cutting through the convex border, the knife passed into and disclosed a large, friable cauliflower-like, pale pink to white mass, occupying most of the pelvis and parenchyma of the kidney. Starting just below the upper pole, where the cortex was apparently intact, the tumor gradually extended on all sides from its origin in the pelvis, and seemed to compress rather than infiltrate the medulla and cortex so that the latter portions of the kidney became thinner and thinner until the lower pole was reached, where only a thin shell of kidney substance remained. Only a few distorted pyramids and papillae could be made out at the upper pole.

The growth was typically cauliflower-like in appearance and consistency, but possibly more friable. The elements making up this tumor were numerous villous projections crowding their way out and finding the greatest room for expansion at the lower pole, where only a very thin shell of kidney substance prevented their breaking through to the surface. At all points one could bluntly dissect the tumor away from compressed renal parenchyma, a layer of thick, fibrous tissue coming away with the tumor and apparently clearly demarcating the latter from normal kidney tissue. The ureteral opening merely served as an outlet, without the ureter itself being infiltrated. Sections taken from the growth showed numerous fine, vascularized, branched connective tissue stalks bearing elongated, cuboidal or cylindric epithelial cells, arranged several rows deep and almost uniformly at right angles to the supporting stalk. The nuclei of these cells were rather rich in chromatin. The ureter throughout its length was free from tumor involvement.

COMMENT

A study of this case shows that the chief symptom was hematuria, and, as the result of loss of blood, weakness and dyspnea. A tumor was not palpable,

owing to the fact that the kidney was not enlarged. The roentgen-ray findings were negative. The cystoscopic findings showing the blood to come from the left side, together with the marked diminution of the kidney function on the affected side, were of great value. The noninvolvement of the ureter and the freedom of the bladder from implantations, together with complete relief of symptoms, give assurance of complete cure.

A letter received from the patient, Jan. 31, 1924, almost four years after operation, stated that there had been no return of symptoms.

850 Park Avenue.

AORTIC ANEURYSM RUPTURING INTO THE PULMONARY ARTERY

REPORT OF TWO CASES *

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These cases are of interest because they are clear examples of an uncommon complication of aortic aneurysm. In both instances the physical signs were similar and so distinctive as to be pathognomonic of internal arteriovenous aneurysm.

The recorded cases presenting an abnormal communication between the root of the aorta and the pulmonary artery may be separated into two distinct groups. In one, the aorta is not diseased, and the opening between it and the pulmonary artery is due to a developmental defect in the wall between the two great vessels. In a few instances, the opening is congenital; in others, it occurs spontaneously at the site of a small aneurysm involving the right anterior aortic sinus of Valsalva. Such a case was recently reported by Abbott,[1] who summarizes the eight previously recorded cases, and presents a critical discussion of the subject from the embryologic and comparative anatomic point of view.

In the other more common group, the aorta is diseased and is the seat of an aneurysmal dilatation, usually at its root, which bulges anteriorly into the lumen of the pulmonary artery and, ultimately, ruptures. The earlier writers did not associate syphilis with disease of the aorta, but their descriptions of the gross appearance of the aortic wall are, in several instances, given with sufficient detail to leave little doubt as to the presence of syphilis.

Thurman,[2] in 1840, published the first important paper on the subject, in which he outlined the clinical features of abnormal communication between the aorta and the pulmonary circulation. Case reports with discussion of the clinical features and a summary of past recorded cases were published by Peacock,[3] Taylor[4] and Kappis.[5] The last mentioned author summarizes thirty-two past cases, and refers to eighteen others in which only postmortem observations were made. More recently, cases have been recorded by Wooley,[6] Jankovich,[7] Hollis,[8] Stevenson[9] and Lenable and Chapel.[10]

REPORT OF CASES

CASE 1.—*History.*—E. B., a colored woman, aged 51, married, and occupied as a laundress, first came under observation, Jan. 25, 1923, complaining of "shortness of breath and dropsy." With the exception of typhoid fever in her youth, the patient had always been well, and had never been incapacitated prior to the onset of her present trouble. She had been married twenty-one years but had never been pregnant. Two months before her death she first noticed undue shortness of breath on exertion, and a little later, swelling of the feet and ankles. These symptoms gradually increased in severity, but it was not until two days before admission to the hospital that she was forced to remain in bed. The clinical course during the six days that the patient was under observation was one of progressive circulatory failure.

Physical Examination.—The patient was well developed and well nourished, sat upright in bed, and showed moderate respiratory distress. The breathing was shallow, and the rate was 26 a minute. Congestion was found at both lung bases, and there was marked edema of the abdominal wall as well as over the sacrum and the lower extremities. The liver extended to the level of the umbilicus and was tender. The pulse was collapsing and suggested the water-hammer type of aortic insufficiency, except for a conspicuous diminution in volume. The systolic blood pressure was 116; diastolic, 30.

A diffuse activity was visible over the whole precordium, more marked toward the left border. The vigor of the heart's contraction appeared in sharp contrast to the small volume of blood that reached the palpable arteries. There was slight left-sided enlargement, demonstrable by percussion, but the subcardial diaphragm was not depressed, as judged by the flare of the subcostal angle during inspiration. The apex impulse was found in the fifth interspace in the midclavicular line. The cardiac mechanism was normal, and the rate was 100 a minute. With the hand over the conus, one felt a most unusual thrill, characterized by extraordinary intensity, and giving one the impression of a superficial origin. It was more pronounced in the second and third interspaces, 5 cm. to the left of the sternum, and was transmitted radially in all directions, with the original intensity better preserved as one approached the left shoulder. The bruit waxed to maximum intensity during systole, and gradually faded out in late diastole. On auscultation, there was a loud, harsh and gushing systolic murmur, maximal in the second left interspace and transmitted well over the whole chest. A less harsh and more localized diastolic blow was heard over the base of the heart, which diminished in intensity from above downward. Stereoscopic studies and roentgenograms showed the heart a little enlarged in all directions, but the shadow was more definitely widened over the base. The aorta appeared normal. The Wassermann reaction on the blood was + + + +.

The clinical diagnosis was syphilis of the aorta, with extensive destruction of the aortic leaflets. Death was due to cardiac failure.

Necropsy.—The postmortem examination was performed two hours after death, and only the important facts are given here. The body was 165 cm. long and weighed 64 kg. There was marked edema of the abdominal wall and lower extremities. When the thorax was opened the heart was seen to occupy a normal position. The pericardium was normal, and the sac contained 270 c.c. of clear, straw-colored fluid. The heart weighed 350 gm. When the heart was opened, the

* From the Medical Clinic of Western Reserve University at City Hospital.

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muscle presented a normal appearance. The left ventricular wall measured 18 mm. at its thickest portion, and the right, 9 mm. The circumference of the aortic ring was 7.2 mm. The aortic, mitral and tricuspid valves were not diseased. In the right anterior aortic sinus of Valsalva there was a round orifice 2.7 cm. in diameter, partitioned through its center so as to form the common opening of two distinct round pockets. The smaller of these was 4 cm. in diameter and projected to the right; the other was 5 cm. in diameter and protruded anteriorly and laterally, so that approximately one half of the sac bulged into the conus arteriosus at the level of the pulmonary ring. Two cm. above the point of insertion of the anterior and posterior pulmonary leaflets, there was a ragged edged opening 8 by 6 mm., so that the aorta and the pulmonary artery were directly communicating (Figs. 1 and 2).

With the exception of the two aneurysmal pockets described, the aorta was not widened. The lining of the vessel, from its root throughout the transverse arch, was roughened by irregular folds and hyalinized nodular swellings. Here and there were a few calcified plaques. The intima in many places showed the typical wrinkling seen in syphilitic aortitis.

Fig. 1 (Case 1).—Bilocular opening of aneurysm from the right anterior aortic sinus of Valsalva.

The orifice of the right coronary was completely occluded by an organized thrombus in the floor of the smaller sac. The left coronary was patent. Both vessels when opened presented a normal intima.

The anatomic diagnosis was syphilitic aortitis involving the ascending and transverse arch; biloculate aneurysm in the right anterior aortic sinus of Valsalva, one pocket of which bulged into and communicated with the pulmonary artery immediately above the pulmonary leaflets; occlusion of the right coronary artery.

On microscopic examination, the epicardium and subepicardial fat were normal. The myocardial connective tissue was slightly increased throughout, and moderately increased in the neighborhood of the blood vessels. The connective tissue fibrils of the myocardium and the subepicardial fat were in many places loosely arranged and separated by a finely granular or hyaline basophilic material of mucoid character. More especially in these situations, but occurring also in the denser connective tissue, there was a moderate number of cells, most of which were of lymphoid type, but associated also with a few larger cells, evidently of reticulo-endothelial type, and an occasional plasma cell. The arteries were all of small caliber, and showed in a few instances a slight fibrosis of the intima. The heart muscle showed apparent increase in transverse diameter, moderate segmentation and diminution in transverse striation. The nuclei had square ends, and were large, rich in chromatin, and showed an increase in their transverse diameter. The peripolar pigment was scanty.

The aorta showed nodular thickening of the intima by dense fibrous connective tissue, with hyalinization but no atheroma or calcification. The deeper intima and superficial media showed a loose arrangement of tissue, with finely granular or hyaline basophilic material of mucoid character between the fibrils. The media showed diffuse fibrosis. Surrounding the blood vessels of the media was a small collar of lymphoid cells, associated with obvious interruption of the elastica, but with no notable increase of connective tissue. Similar perivascular infiltration was marked and extensive in the adventitia. The arteries of the adventitia showed definite fibrosis of the intima, which in one instance was nodular.

The microscopic diagnosis was syphilitic aortitis; syphilitic chronic interstitial myocarditis and hypertrophy of myocardium.

The necropsy findings in this case not only explained the physical signs elicited, though not clearly understood during life, but also afforded a basis for speculation on the clinical course. The sudden development of symptoms of heart failure may have occurred when the aorta first ruptured into the pulmonary circulation. Gradual widening of the hole may explain the progressive downward course to death in two months; on the other hand, it seems equally probable that the opening, when first established, was much the same size as that found at the necropsy. In either case, the communication between the systemic and pulmonary circuits placed an insuperable burden on the heart—already embarrassed by the stenosis at the pulmonary orifice. The latter impediment and the occlusion of the right coronary artery were certainly contributory factors leading to the heart's ultimate exhaustion. The most striking feature in the physical examination, as indicated above, was the nearly continuous and superficial, purring tremor felt over the conus, heard as a loud gushing murmur, maximum in systole, less loud and gradually waning in late diastole. Two factors probably combined to render the systolic thrill unusually prominent, namely, the rush of blood from the aorta into the pulmonary artery, and the stenosis at the pulmonary orifice.

A month after the foregoing case was observed, another patient (Case 2) was admitted presenting much the same clinical picture, and a similar anatomic lesion at the subsequent necropsy.

CASE 2.—*History.*—C. R., a colored man, aged 29, worked at hard manual labor until three weeks before his death. There was no history of rheumatic infection, and he stated that he had never had syphilis. He was forced to stop work, three weeks before coming under observation, because of breathlessness, which improved temporarily after two weeks in bed. A few days later, he developed marked dyspnea, and slight edema of the legs with ascites, and in this condition came to the hospital. He died in forty-eight hours.

Physical Examination.—The patient was well developed and muscular, and had marked respiratory distress. His breathing was rapid (40 times a minute) and shallow in type. The thoracic excursion was limited, owing to pulmonary congestion and pleural effusion at both bases. Slight edema was present over both lower extremities, and the liver was enlarged and tender. No distention of the neck vessels was apparent.

The apex beat was palpable in the sixth interspace just inside the nipple line. The area of cardiac dulness was slightly enlarged to the left. Palpating over the base in an

area bounded by the left sternal border and the nipple line, and by the first and fifth ribs, one felt a forcible systolic thrill, very superficial, with maximum intensity in the second left interspace. Over the apex there was a loud blowing systolic murmur, increasing in intensity as the base was approached until one reached the second left interspace, where the murmur was unusually loud and rasping, with a curious machinery-like whirl. It was followed by a sharp, clear second sound. The cardiac mechanism was normal, and the rate was 96 a minute. Although the heart was beating forcibly against the chest wall there was the same small volume celer type of pulse as was observed in Case 1. The systolic blood pressure was 140; diastolic, 40. Under the fluoroscope, one could not detect any undue enlargement of the aorta. The roentgenograms showed the heart slightly enlarged in all diameters, but the slight widening at the base observed in the previous case was not seen. The Wassermann reaction on the blood was + + + +. No change in the physical signs was noted during the forty-eight hours that the patient was observed. Four hours before death, he became comatose, and the pulse became inpalpable in the radial artery.

The clinical diagnosis was syphilitic aortitis; aneurysm at the root of the aorta with rupture into the pulmonary circulation. Death was from cardiac failure.

Necropsy.—The body was 167 cm. in length and weighed 64 kg. There was slight edema of the lower extremities, but no other external abnormalities were noted. The peritoneum was smooth; the viscera occupied a normal position, and there was no free fluid.

There were a few fibrous adhesions about the left lung posteriorly; the right chest contained 800 c.c. of lemon colored fluid; the left, 400 c.c.

Fig. 2 (Case 1).—Right side of heart; aneurysm projecting into pulmonary artery, with rupture at the point indicated.

The pericardium was not diseased. The heart weighed 400 gm. The muscle presented a normal appearance. The left ventricular wall measured 1.8 cm. at its thickest part, while the right ventricle was 1 cm. in thickness. The aortic orifice measured 8 cm. in circumference, and the leaflets showed no evidence of abnormality. Immediately above and partly involving the left anterior aortic sinus of Valsalva, there was an opening 4.5 cm. in diameter, which led into an aneurysmal sac 4.5 cm. deep. This sac extended upward and to the right, so that its left wall was adherent to the pulmonary artery (Fig. 3). When the right side of the heart was opened,

Fig. 3 (Case 2).—Opening of aneurysm above and partly involving the left anterior aortic sinus of Valsalva.

the aneurysm was seen to bulge slightly into the conus, and 3 mm. above the free edge of the posterior pulmonary leaflet (adherent for one-half its depth to the wall of the sac) there was a hole 1.5 cm. in diameter connecting the aorta and the pulmonary artery (Fig. 4). The edges of the opening were ragged, and the wall in the immediate vicinity was appreciably thinned; otherwise the pulmonary intima was smooth and glistening. The mitral ring was 9.5 cm. in circumference, and the valves appeared normal. The tricuspid opening was 11 cm. in circumference, with normal valves. The coronary arteries were patent throughout, and presented no gross evidence of disease.

The aortic wall, forming the floor of the aneurysmal sac, was roughened by irregular, pearly nodules, and showed the typical wrinkling of syphilitic aortitis. The same process was present at the root of the aorta, and extended well up into the transverse arch. No calcified areas were seen anywhere in the intima. With the exception of some fibrosis of the kidneys and general visceral congestion, the other organs showed nothing remarkable.

The anatomic diagnosis was syphilitic aortitis; sacculated aneurysm involving the left anterior aortic sinus of Valsalva with rupture into the pulmonary artery; bilateral hydrothorax; chronic passive congestion of the viscera.

Microscopic examination showed that the epicardium was normal, and the subepicardial fat scanty. The connective tissue of the epicardium and subepicardial fat was richly and diffusely infiltrated with lymphoid cells, while here and there a few reticulo-endothelial and plasma cells were seen. There was a slight increase in connective tissue around the blood vessels, and in this situation there was a very slight infiltration of lymphoid cells. Mucoid degeneration could not be identified. The arteries were apparently normal. The heart muscle showed apparent increase in the transverse diameter, slight

segmentation, and loss of transverse striation. Large, vesicular nuclei were seen. These had square ends, and were increased in the transverse diameter. Peripolar pigment was scanty.

The intima of the aorta showed marked, somewhat nodular, fibrous thickening, with slight hyalinization and extensive atheromatous necrosis, but no calcification. The media showed diffuse fibrosis, but was not deformed by the intimal disease. There was a slight perivascular infiltration of lymphoid cells, associated with slight but definite interruption of the elastica. The adventitia showed loosely arranged connective tissue and marked perivascular round cell infiltration. The arteries of the adventitia were normal.

The microscopic diagnosis was syphilitic aortitis; chronic interstitial myocarditis (probably syphilitic), and hypertrophy of myocardium.

COMMENT

The following considerations are based, for the most part, on a review of twenty past cases of aortic

Fig. 4 (Case 2).—Right side of heart; opening into pulmonary artery.

aneurysm rupturing into the pulmonary artery, in which the reports record the salient features in the clinical course, and the physical examination, as well as a fairly detailed report of the necropsy findings.

Etiology.—If we exclude the small group of cases attributed to congenital defects, carefully studied by Abbott, the aorta is described as diseased in the past writings, and the account of the gross appearance in some instances leaves little doubt as to the presence of syphilis. Further support is given this assumption by our present knowledge of the relation of syphilis to aortic aneurysms.

Anatomic Findings.—In most cases there was a sacculated aneurysm at the root of the aorta immediately above the leaflets or involving one of the sinuses of Valsalva, which projected anteriorly so as to encroach on the wall of the pulmonary artery. The aneurysms were usually small, and described as the size of a hen's egg or a walnut. Seldom was the aorta the seat of a diffuse dilatation.

The actual weight of the heart was given in only a few instances; definite hypertrophy, however, was noted most frequently in those hearts showing incompetent aortic leaflets. Cardiac hypertrophy, as nearly as one can judge, was not a typical finding, probably because of the short duration of life after the lesion was established.

Clinical Course.—A feature noted in nearly every case was the abrupt onset of the illness with breathlessness, sometimes pain over the chest, and, a little later, cough, and edema of the lower extremities. Temporary improvement was noted in a few cases following bed rest, but, as a rule, the clinical feature was one of progressive circulatory failure, death occurring in a few weeks or at most in a few months. One case is reported in which the patient survived for a year.

Physical Signs.—A common finding, and in our two cases the most striking physical sign, was the superficial and peculiarly intense systolic thrill over the conus arteriosus with maximum intensity in the second and third left intercostal spaces. This was accompanied by a harsh, blowing murmur, which was frequently continuous throughout the cardiac cycle. The pulse was described as jerky or regurgitant, but in both our cases the diminution in volume was an equally conspicuous feature. Somewhat similar signs are seen in cases of aneurysms opening into the superior vena cava, but here the thrill and murmurs are found to the right of the sternum rather than to the left, while cyanosis, distention of the veins and edema of the face and neck are usually more striking features. It is difficult and frequently impossible to elicit clear signs of an aneurysm, because the sac is usually small and does not project beyond the base of the heart. In both our cases neither roentgen-ray nor fluoroscopic studies showed any disease of the aorta.

ADIPOSIS DOLOROSA, 300 B. C.*

LEROY CRUMMER, M.D.
OMAHA

At a recent exhibition of archeologic objects of Greek and Eutruscan origin, a terra cotta grotesque seemed strangely familiar; and, after a moment's embarrassment from failure of association, there came a flash of recognition, and the grotesque assumed the proportions of a case of adiposis dolorosa seen recently at the University Hospital.

The history of the earlier phases of the development of medicine depends fully as much on objects in bronze, marble and clay as on the written word; no picture on vellum or paper exists that dates from this early period (300 B. C.), and the manuscripts of the medicine of the ancients have suffered so much at the hands of the generations of scribes and the destructive influences of the time that it is difficult to be sure of the authenticity of much of the material that dates from the period of Hippocrates. The interpolations at the hands of later commentators are often so difficult to dissociate from the ideas of the original authors that translations from the best preserved codices often may be erroneous.

Objects formed of the more enduring material offer opportunity for interpretation, and, if properly inter-

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preted, give an understanding not only of the medicine of the period, but, what is equally important, the relationship of medicine to the people of the time. This line of investigation has yielded many facts of definite interest, particularly in the study of the history of anatomy. Hollander, Sudhof and Garrison [1] have all

Votive offering of terra cotta.

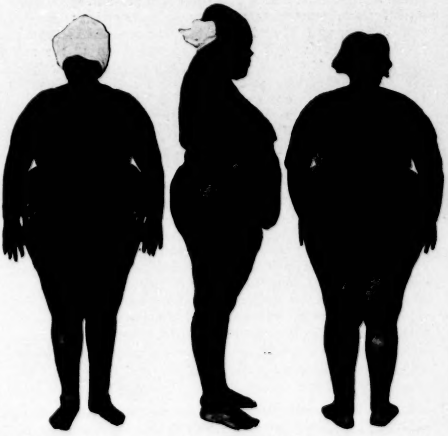
devoted much time and interest to the various articles found in the ruins of the ancient temples of health. Dr. Charles Singer, in his recent Fitzpatrick lectures, traces the history of anatomy in the early periods almost entirely from the standpoint of archeology.

It is well established that visitors to the temple of health at Cos and Cnidus frequently left behind them offerings to the gods. These offerings took the form of carving on bone, metal or stone, modeling in clay, or even chiseling in marble; such an object was left as a gift to the gods of healing, not as a fee, although many of the gifts were of great intrinsic value, but in appreciation of the benefits derived from the visit—an ex voto. When it was impossible for a patient to visit the temple in person, he had a model made in some form of plastic art of that part of his body which was diseased, and sent this model by his next friend with a particular supplication to the gods. Most of these were, of course, ephemeral, and disappeared with the ravages of time; but many were of more resistant material, and have been found in the course of archeologic research, and are now preserved in the museums and private collections. From a careful study of these objects, a suggestion of knowledge at least can be gained, not only of the anatomy of the period, but also of some disease processes. These votive offerings also afford evidence concerning the peculiar mixture of belief and superstition, and of dependence, which is always the determining factor in the relationship between physician and patient, be he priest or medicus. In the terra cottas, there is found a modeling which approaches realism, and this figure made in the third century before Christ is of a period when the classical style in modeling had yielded to a more naturalistic form; this was after the time of Pericles, so that the artisans who made these figures were competent to work with a technic that produced the figure with great naturalness.

The term "grotesque" applied to these terra cotta statuettes need not imply that they were fanciful figures. There is perhaps an exaggeration of the essential points amounting almost to caricature, but the fundamental idea of the model is usually easily distinguishable, and the symbolism implied or expressed can be differentiated definitely. This is shown in the terra cotta of Italian origin recently acquired by the Welcome Historical Museum in which the figure is that of a pregnant woman, and lightly poised on her shoulder is the Pagan prototype of the christian Saint Anne.

While more attention has been directed to the donoria showing definite anatomic details, there is also a wide field of interest in the class of objects that give information concerning the superstitious or religious beliefs of this time, and a lesser number of the ex votos represent such accurate pictures that definite disease processes can be recognized. Deformities of various types, skin diseases, tumors of the breast and other parts of the body, facial paralysis, strabismus and the buboes of plague are all represented in the known terra cotta votive offerings of both Grecian and Italian origin.

The donorium illustrated here was found at Athens in the excavations of 1914, and has been ascribed to the third century before Christ. It is a pure terra cotta, is polychrome, and stands 12 cm. high. The figure is entirely nude, save for a cap of a type which may be recognized as that still worn by the peasants in Tuscany. At first glance, one is struck with the pendulous abdomen and hanging breasts, a feature that has led to the interpretation of a similar figure by Hollander



Patient with adiposis dolorosa.

as pregnancy in an elderly woman; but, on looking at the side and more particularly the back of this figure, it will be seen that the pendulous breasts and abdomen are merely a part of a generalized obesity of a type that may be recognized as a definite disease. Close inspection shows a saddle shaped mass of fat sharply demarcated from the surrounding form, occupying the

1. Garrison, F. H.: History and Bibliography of Anatomic Illustration, Choulant-Frank, Chicago University Press, 1920.

lumbar region and extending over the hips and down the thighs. There is a similar accumulation of fat over each shoulder behind, which is distributed over the outer arm as far as the elbow; but, with the massive arm and thigh, the forearm and leg are thin to leanness, and the hand is almost Lilliputian.

It seems difficult to explain the placidity of countenance in a votive offering, which, in itself, is evidence of an active symptom-producing disease. The mere discomfort of the obesity was scarcely enough to prompt appeal to the gods of health, so pain must have been the symptom that urged recourse to the temple.

This riddle, however, is solved by the condition of adiposis dolorosa as we know it today. One of the rather striking features of this disease is the narration of pain manifestation and even endurance of acute pain itself during examination, with the masklike face totally devoid of the usual expression, either vocal or facial, of the severe pain endured. From this standpoint, it can be assumed that the original of this ex voto really had marked symptoms accompanying her peculiar form, and since this cannot be relieved by treatment, we may conclude that this effigy was made and sent in the form of a petition to the gods of health rather than as an expression of thankfulness for relief of the symptoms.

For purposes of comparison, reproductions of photographs of a recent case are offered, and it seems worth while to append a short history and clinical examination of this case to bring to mind the motivation for the modeling of this old grotesque.

Mrs. L. J., aged about 38, has been under observation more or less continuously since 1916. Throughout these eight years, her complaints have been of pain of a superficial character in the left side and back. She has noted some irregularity in menstruation, amounting at times to amenorrhea; she has two children, aged 21 and 23. At 30, she weighed 200 pounds (90 kg.), which weight gradually increased during the next four years to 240 pounds (108 kg.); a year later, she weighed 253 pounds (114 kg.) and fifteen months later 268 pounds (121 kg.), her present weight. She is 61 inches (155 cm.) tall; the abdomen measures 60 inches (152 cm.); thighs, 33 inches (84 cm.); calf, 16½ inches (42 cm.); ankle, 10 inches (25 cm.); she wears shoes size, 4½; gloves No. 5. Clinical examination showed normal urine; the systolic blood pressure was 140; diastolic, 90; the basal metabolism was —24 per cent. Roentgen-ray examination of the skull shows the sella normal in size.

The peculiar distribution of fatty masses, the disproportion between the size of the shoe and gloves and the other measurements, and constantly increasing pain definitely but superficially localized in the fatty masses, justify a diagnosis of adiposis dolorosa. Palpation of the fatty masses was attended with pain; the vocal expression of pain sensation was unattended by facial movement, and the photograph of this patient shows the characteristic intense placidity of countenance.

801 City National Bank Building.

Community Health Program.—One of the greatest contributions to be made by the health center movement is the better understanding of health problems presented in particular areas, which intimate and intensive neighborhood work makes possible. A careful study of the defects found in the preschool age period clearly indicated that the outstanding defects of this group were attributable to the high incidence of rickets among babies. This led to our undertaking in cooperation with the health department an interesting campaign against this disease, which promises to be a most effective preventive measure.—J. C. Gebhart, *Hosp. Social Service* 8:140 (Sept.) 1923.

FURTHER NOTES ON THE TREATMENT OF PERTUSSIS BY THE ROENTGEN RAY*

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Following up the work indicated in a preliminary note last year,[1] there is presented here for discussion the results of treatment with the roentgen ray of 300 cases of whooping cough by the medical staff of the Boston Floating Hospital. This work was made possible by the trustees of the Boston Floating Hospital, at our suggestion, who felt that the question was of sufficient importance to warrant the installation of a roentgen-ray apparatus in the outpatient department of the "On Shore" Hospital at 40 Wigglesworth Street, Boston. The work was carried on enthusiastically by members of the medical staff, who gave freely of their time in accumulating the data.

It is our hope that these facts may be of value to other physicians and give them more assurance in treating whooping cough by this method. The data represent the historical evidence of the first 300 patients voluntarily applying for roentgen-ray treatment, and as such is, of course, open to a certain amount of criticism as to its accuracy. It is difficult to estimate the human and personal equation in the patients' or parents' interpretation of the benefit from treatment, but the series is sufficiently large to enable us to draw certain generalities that would be impossible otherwise. This one weak link, from the scientific standpoint, in our chain of evidence, we are trying to overcome this year by the careful survey of a small group of cases in the wards of the "On Shore" Hospital.

With the exception of a brief trial in Russia in 1911, the roentgen-ray treatment of whooping cough seems to have been forgotten. In our present state of knowledge, the justification for its use seems to be based on the same theory as that for its use in bronchitis—the apparent involvement of the hilum lymph nodes in an acute inflammatory hyperplasia—and the action on these glands in reducing their size. This reduction in size is again more theoretical than actually demonstrable, but the successful clinical application makes the use of the roentgen ray rational. In addition to this action on the bronchial lymph nodes, there is the possible, theoretical, direct action on the bacteria, and on the hematopoietic system in general. Experimental laboratory work along these lines is slowly being carried on to help us understand the phenomena.

The cases were obtained from a number of sources. Many of the patients reported as a result of publicity. Others were sent by physicians, hospital clinics, health centers and institutions. Many came as a result of early, successfully treated patients spreading the news in their locality. Practically all the patients treated "whooped." The clinical diagnosis in each case was based on the presence of paroxysmal couching with whooping; and was usually accompanied by cyanosis and vomiting. Hemorrhages and convulsions were rarely encountered. Blood examination was used as confirmatory evidence in doubtful cases.

* From the "On Shore" Department of the Boston Floating Hospital.
* Read before the Pediatric Section of the New York Academy of Medicine, Feb. 14, 1924.

1. Bowditch, H. I., and Leonard, R. D.: Boston M. & S. J. **188**: 312 (March 8) 1923; abstr. J. A. M. A. **80**: 1098 (April 14) 1923.

The ages of the patients ranged from the early weeks of life to 50 years. The predominance can be found, by examination of Chart 1, to be largely during the first four or five years of life. Thirty per cent. of the cases were in children under 2 years, and about 70 per cent. under 6 years. Of the remaining 30 per cent., 25 per cent. of the cases were before the tenth year and only 4 per cent. in older persons.

Cases at admission were usually in the fourth week of the disease, although, in a few instances, they were admitted earlier; but, in many cases, they were not admitted until the fifth or sixth week. In general, we can see that the earlier in the disease treatment is begun, the more satisfactory the results are apt to be. Many of the more advanced cases did show marked improvement. Examination of the accompanying tables will give a more complete impression of these resutls than any generalities that we can make.

The routine procedure was to take the history on admission, with especial reference to the duration of the disease and the source of exposure. This was followed by careful physical examination, including, as far as possible, complete nose, throat and laryngeal inspection. Particular emphasis was laid on the chest, including careful search for evidence of bronchial gland involvement and d'Espine's phenomenon. The temperature, pulse and respiration were recorded when possible.

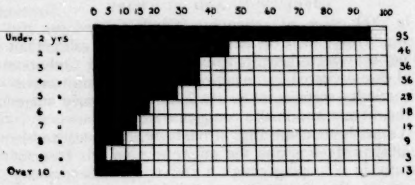

Chart 1.—Age incidence.

From the laboratory standpoint, in this preliminary survey, blood examinations were made chiefly as an aid in diagnosis, and bacteriologic studies of the sputum were made. In this primary work difficulties were encountered, and this work is not yet ready to report. We are trying to carry it on in more detail, and we hope to report later.

The roentgen-ray treatment was given under the supervision of Dr. Ralph Leonard, consulting roentgenologist for the Boston Floating Hospital. Considerable thought was given to the dosage, and it was deemed advisable, in order to avoid criticism while the treatment was still in its experimental stage, to administer doses well under those capable of producing skin burns or thymic or thyroid atrophy.

The first procedure was to make a roentgen-ray examination of the chest. The routine of the examination consisted in taking a film of the chest in the anteroposterior position and, where especially indicated, a lateral view. Repeated roentgenographic study was made at intervals, at least at the conclusion of the last treatment and frequently afterward, where possible, with an interval of a week or two after the patient was clinically well. Discussion of the roentgenographic findings from this examination will be given later.

The apparatus used in the treatment consisted of an ordinary high tension transformer, with a rectifying device, universal Coolidge tube and a treatment stand, with cones of such size and shape as would include the entire chest at a distance of 28 inches. Treatments were given to the patients recumbent on an ordinary couch. We used no special device for holding the small patients quiet, the assistance of the nurse or mother being usually all that was required. The usual protective precautions were observed. When desirable, particular protection was afforded the thyroid gland by covering the gland area with sheet lead.

TABLE 1.—*Relation of Ages to Disease Period*

Period of Disease in Weeks	0-2 Yrs.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9-15 Yrs.	16-50 Yrs.	Totals
2.....	2	0	1	1	0	0	0	0	0	0	4
3.....	7	2	4	3	3	0	1	0	0	0	20
4.....	10	7	4	2	1	1	0	0	1	0	26
5.....	10	9	3	2	1	3	3	1	1	0	33
6.....	16	3	4	7	7	1	4	1	1	3	47
7.....	11	10	1	6	3	5	2	3	0	1	42
8.....	10	4	3	2	3	3	2	3	2	2	34
9.....	4	1	4	1	0	1	0	1	0	1	13
10.....	2	0	3	2	1	0	1	0	0	0	9
Over 10....	10	3	3	1	2	3	1	0	2	0	25
Unknown..	12	6	7	9	7	2	0	1	1	2	47
	94	45	37	36	28	19	14	10	8	9	300

Patients were given treatments every alternate day for three treatments—the first, third and fifth days. Then, after an interval of seven days, a similar second course of treatments was given in the more protracted and resistant cases. These additional treatments were infrequent, not seeming necessary, as a rule.

The ordinary dosage for a child of from 5 to 10 years was five minutes' exposure with the tube set at 4 ma., a 1 mm. aluminum filter and a 6 to 7 inch back up spark at a distance of 28 inches being employed. This dosage was graded somewhat, according to the age of the patient, so that an infant of 3 or 4 months would receive the same dosage, with the exception that the time interval would be three instead of five minutes. The first treatment was given over the anterior chest, the second treatment over the back of the chest,

TABLE 2.—*Incidence of Symptoms on Admission*

Age	Number of Cases	Average Duration, Wk.	Cough	Whoop	Vomiting	Cyanosis	Redness	Dyspnea	Convulsions	Hemorrhage
0-2 yrs...	95	5.5	95	66	70	40	77	74	5	0
2.....	46	5.5	46	37	32	15	38	32	0	0
3.....	36	6.0	36	24	20	8	23	19	0	2
4.....	36	4.5	36	29	26	14	24	23	1	1
5.....	28	6	28	20	17	3	22	15	0	0
6.....	18	7	18	16	13	1	16	10	0	0
7.....	14	5	14	12	13	5	12	9	0	0
8.....	9	5	9	6	7	3	6	6	0	0
9.....	3	7	3	2	3	0	2	2	0	0
10.....	2	10	2	2	2	0	0	2	0	0
11.....	2	5	2	0	1	0	1	1	0	0
12.....	1	4	1	1	1	0	1	1	0	0
16-50 yrs..	8	7	8	7	6	0	6	8	0	0

and the remaining treatments alternating in this manner. The total dosage was well within the limits of safety, four exposures totaling less than one-half an erythema dose. In case the symptoms persisted, occasionally a second series of treatments, with the same dosage, was given after an interval of ten days or two weeks. This happened rarely. Very few of the patients had more than four treatments, as the mothers felt satisfied with the results, and, keeping in mind that the treatment was still in the experimental stage, we did not feel justified in pushing it.

The first plate was taken on admission, and the second and third plates were taken on the third or later visits. This brought out interesting information that has not been particularly emphasized in the literature. In about one third of the cases, definite pathologic change involving the lung was noted. It was characterized by a diffuse mottling, suggestively along the bronchial tree, and most prominently in the right lower lobe. This roentgenologic evidence was discussed last year at the annual session of the American Medical Association at San Francisco by Dr. Leonard, and interest in this aspect of the problem has been aroused, we feel, by the reports of roentgenologists from various parts of the country.

In discussing the treatment by the roentgen ray, the chief point of interest is, of course, the results. The charts will give an opportunity for the drawing of conclusions. At this time we do not feel that we should put too much emphasis on our own interpretation, but merely present the facts that we have collected in these 300 cases and try in this manner to stimulate interest in this much neglected disease.

The clinical course of the disease under treatment seemed to be modified very definitely. Within a few hours (about eight) after the first treatment, the patient experienced a feeling of relief. The symptoms were reduced in severity and duration. At the end of twenty-four hours, the symptoms usually reverted to their former degree, and the next day no very marked effects from the treatment were noted. After the second treatment, the symptoms usually fell back a little. There were cases in which the severity of the paroxysms was less than after the first treatment. The most marked changes followed the third treatment. The patient seemed more noticeably relieved—the severity of the paroxysms was reduced, whooping almost disappeared, cyanosis and vomiting became minor factors, and often more uninterrupted sleep at night ensued.

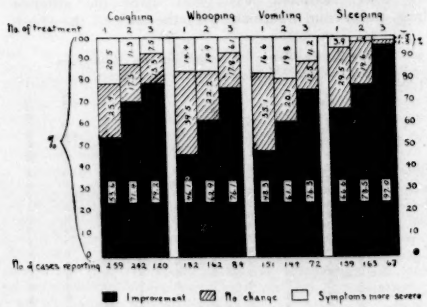

Chart 2.—Effect of treatment.

By the end of a week, the appetite usually improved, and the patient was much better.

While these results do not always follow, in general the earlier the case is treated and the younger the patient, the better the response.

Extremes were encountered, cases in which the mother reported cure following one treatment, and cases that persisted with no very marked benefit, in spite of the two courses of treatment. In the entire series of cases, including practically 100 children under 2 years of age, only one death occurred.

We asked the patients or their parents for frank criticism from the point of view of results. This we tried to have them express on a percentage basis, indicating the approximate improvement or lack of improvement by a definite figure instead of by the usual vague statements. To aid them in expressing their opinions, a daily report card was given on which the coughing, whooping, vomiting and sleeping were recorded. This percentage of improvement is represented graphically by Chart 3.

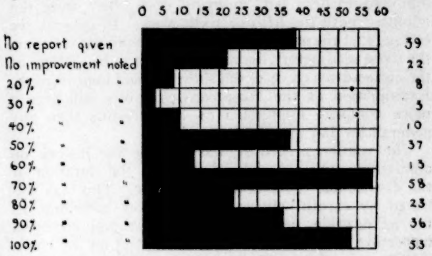

Chart 3.—Value of Treatment.

CONCLUSION AND SUMMARY

In 300 cases of whooping cough treated by the roentgen ray, there is strong evidence that more than 80 per cent. were benefited by the treatment. Only one fatal case occurred in the entire series. The most favorable results seemed to be obtained in the early stages of the disease and in the younger children.

We wish to come out strongly with a plea to the medical profession and the public to give this form of therapy in whooping cough a fair trial. The primary object of this report is to stimulate interest in this problem, which is one of the most important we have from the point of view of infant mortality, among the infectious diseases. We appeal for the exchange of views and for the accumulation of data in all parts of the country to help in this attempt to put whooping cough in a comparable position to that of diphtheria, typhoid fever and smallpox.

40 Wigglesworth Street.

Medical Psychology.—It is advised that a couse in medical psychology be offered early in the curriculum. This course should be directed to the teaching of the reactions of persons to conditions, whether exogenous or endogenous. It is suggested that there be a reorganization of the method of teaching preclinical subjects dealing with nervous and mental diseases to the end that there be closer cooperation of academic departments with the clinical departments dealing with nervous and mental diseases; that such subjects be taught by men who have clinical insight and would be favorable for close cooperation with teachers of clinical subjects. It is recommended that there be a minimum requirement of 160 hours devoted to the teaching of nervous and mental diseases. It is recommended that adequate provision be made for laboratory and research departments in nervous and mental diseases with the establishment of fellowships, scholarships and additional clinics with full-time psychiatric social workers, nurses and psychometrists. Psychiatric wards in general hospitals should be established to furnish clinical material. The teaching of neurology and psychiatry should be placed on such a plane as to make possible graduate teaching such as outlined by the Committee on Graduate Instruction in Neuropsychiatry of the American Medical Association.—*Proc. Inst. Med. Chicago* **4**:222, 1923.

THE INTRADERMAL SALT SOLUTION TEST

II. ITS PROGNOSTIC VALUE IN "NEPHRITIS" WITH GENERALIZED EDEMA *

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AND
WILLIAM B. McCLURE, M.D.
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In July, 1923, we published a preliminary report [1] of observations on the time required for the disappearance of intradermally injected salt solution in six children having edema, and in a small group of control cases including three normal adults. We found that the elevation produced by the injection of 0.2 c.c. of 0.8 per cent. sodium chlorid solution disappeared much more rapidly in the patients with edema than it did in the control cases. We stated that our results suggested that the test might be of value, first, in the detection of disturbed water balance in the tissue, and, secondly, as a means of following the progress of a case in which the presence of such a disturbance had been established.

At present we consider that in normal children over 1 year of age the lower limit of the disappearance time is above sixty minutes, when the technic given below is employed.

It is our purpose in this paper to present an analysis of the results of the application of the intradermal salt solution test in sixteen cases in children characterized by generalized edema, albuminuria, casts and in some cases red blood cells in the urine, absence of increased blood pressure, lack of nitrogen retention in the blood, and showing no evidence of cardiovascular disease. Thirteen of the cases were studied during acute attacks or exacerbations.

OBSERVATIONS

In these sixteen cases we found that:

1. In a general way, the greater the edema the shorter was the disappearance time, and vice versa.

2. When tests were made on patients with developing edema, a reduction of the disappearance time preceded other clinical evidence of edema by several days. In improving edematous cases, increased disappearance time has been observed before the edema showed any apparent decrease. It has occasionally closely approached sixty minutes before the edema was entirely gone.

3. There was no constant relationship between the disappearance time and the degree of albuminuria.

4. There was a tendency to parallelism between the curve of the disappearance time and that of the urinary output, although the change in the disappearance time preceded the change shown on the urinary output chart in some instances.

5. Of five patients in whom the disappearance time in the leg fell below one minute, four died.

6. During improvement with gain of weight, due to normal tissue increase, the disappearance time curve tended to parallel that of the weight. During changes of weight due either to retention or to loss of water, the weight and disappearance time curves were in opposite directions, with few exceptions.

7. In three cases tested only during or after convalescence, the time was more than sixty minutes.

Since the disappearance time sharply decreases coincident with or preceding the development of edema, and increases with or before the subsidence of edema, we have been able to use the curve of the disappearance time as an index of the tendency to increasing or decreasing edema and as a means of ascertaining a return to normal.

The use of the test for prognosis in these cases may be better understood by fixing on an hypothesis as to the nature and cause of edema that is consistent with our results. Edema is an accumulation of an abnormal quantity of water in the tissues. In the accumulation of this water, the tissues must either actively participate or remain passive. If active, during developing or established edema, one should expect to find available water absorbed more rapidly than normally, whereas, if the tissues are passive, one should expect to find water absorbed either at a normal rate or more slowly. We have found an increase in the rapidity of disappearance of salt solution injected into the skin in all edemas so far studied. We assume that, since the tissues take up this extraneous (injected) water more rapidly than

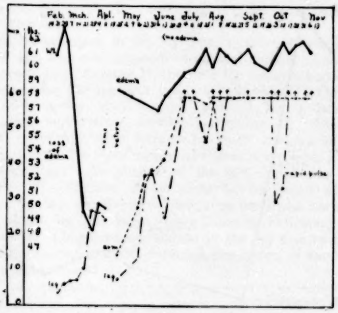

Chart 1.—Observations in Case 1.

normally, they have probably absorbed and retained more water from the circulation than normally and are edematous, in part at least, for that reason.[2]

On the other hand, the theory that, in "nephritic" edema, water accumulates in passive tissues solely because of insufficient elimination by damaged kidneys encounters many objections. The absence of edema in anuria resulting from complete nephrectomy is foremost among these. In cardiac edema, also, we have found abnormally rapid disappearance of salt solution in edematous regions This would be difficult to understand if we considered that the tissues were passive and that mechanical factors alone overloaded them with water. It would be equally difficult to explain our findings if we considered edema entirely due to flooding of the tissues with water as the result of increased permeability of capillary walls. For the present, therefore, we are led to believe that our observations confirm the theory that the tissues take an active part in the production of these edemas. The possibility that other factors besides an increase of the tissue's affinity for or power to hold water may also participate in the production of edema cannot yet be excluded.

* From the Otho S. A. Sprague Memorial Institute Laboratory of the Children's Memorial Hospital.

1. McClure, W. B., and Aldrich, C. A.: Time Required for Disappearance of Intradermally Injected Salt Solution, J. A. M. A. 81: 293-294 (July 28) 1923.

2. With extreme degrees of edema, where there is escape of edema fluid through the needle-puncture wound, one must consider the possibility that the almost instantaneous disappearance of our injected salt solution usually found in such cases may be due to injection directly into the edema fluid.

Fischer,[3] in 1910, advanced the idea that the body protoplasm, being a colloidal substance, was probably subject to the very definite physical and chemical laws of colloids relative to swelling (absorption of water) and shrinking (loss of water). Fischer stated that "a state of edema is induced whenever, in the presence of an adequate supply of water, the affinity of the colloids of the tissues for water is increased above that which we are pleased to call normal." He attributed this increased affinity for water mainly to an increase of acid in the tissues, but mentioned the possibility of other substances playing a similar rôle.

In 1921 he[4] further stated that "the edema of a parenchymatous nephritis is not secondary to the kidney disease, but represents in the involved tissues the same type of change as that which in the kidney we call nephritis. The swelling of the kidney represents the same process in this organ as the swelling of the tissues of the body generally, and both of them are induced by the same cause." He maintains that in circulatory disturbances the edema is the result of an increase of the tissues' affinity for water brought about by an accumulation in them of an abnormal quantity of carbonic acid and other acid products of tissue activity. A chemical lesion is interposed between the mechanical cause and the resulting edema. His contention is that the cause of edema resides in the tissues.

While Fischer's ideas have encountered considerable objection, it is interesting to note that there is now a growing impression that "tubular nephritis," associated with generalized edema, is not nephritis at all—that kidney impairment in these cases is merely part of a general intoxication or a metabolic disturbance.

It is our observation that most cases with generalized edema and pathologic urinary findings in children follow or accompany acute or chronic infectious processes. Our results in this group of cases can be explained on the assumption that a general intoxication, resulting from these infections, causes a change in the tissues which increases their avidity for water, and, since water is available, causes them to swell. We think it probable that the pathologic urinary findings in these cases appear only when the kidneys become sufficiently involved in this general process, and that, as the intoxication decreases, the tissues free their surplus water, and this water will be eliminated from the body provided the kidneys (and possibly other excretory organs) recover sufficiently.

In various cases in which there was no apparent edema we have found short disappearance time. In every such instance, however, the child has been abnormal. Thus, certain cases of cardiac disease, anemia, postfebrile scarlatina, and certain patients after ether anesthesia have shown decreased disappearance time in the absence of pitting. In these conditions it may be assumed that either local or general intoxication is present. Furthermore, with improvement, the disappearance time tended to reach normal.

TECHNIC AND APPLICATION OF TEST

Two-tenths cubic centimeter of an 0.8 per cent. aqueous solution of sodium chlorid is injected intracutaneously under aseptic precautions. Duplicate injections are made about 2 cm. apart either in the forearm or in the leg, or in both. In the forearm the flexor surface is used, and in the leg, either the inner surface of the calf or the lateral side of the anterior surface of the leg. The needle is inserted sufficiently superficially so that the lumen is visible through the skin. The endpoint of the disappearance time of the elevation is determined by very light palpation unassisted by inspection, since color changes seen about the point of injection may cause confusion.

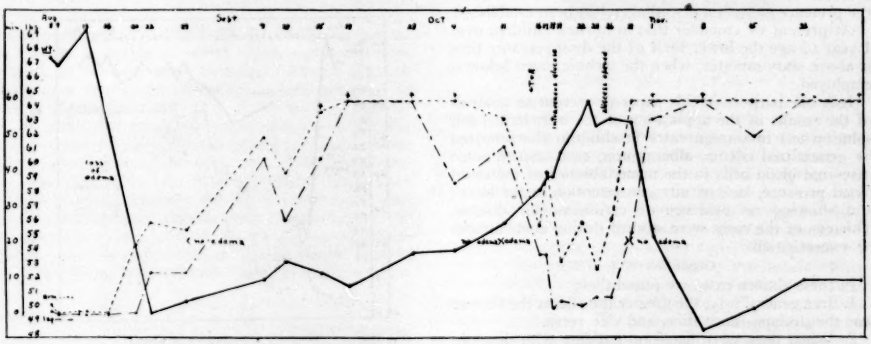

Chart 2.—Observations in Case 2.

It is necessary to disregard the very small traumatic elevation that is occasionally produced just where the needle enters the skin. This may persist after the large elevation, due to the injected salt solution, has disappeared.

In cases of generalized edema associated with pathologic urinary findings, after the acute stage has passed we find the test of great practical value. It is our practice to keep these patients in bed for several weeks. Daily fluid intake and urinary output charts, daily weights, frequent urinalyses, blood chemical analyses and blood pressure determinations are made. The skin test is made at least once a week. In observing these cases, whenever a relapse has occurred it has been preceded by a reduction in the disappearance time. We have been warned a week ahead of time in a few instances.

3. Fischer, M. H.: Oedema, New York, John Wiley and Sons, 1910.
4. Fischer, M. H.: Oedema and Nephritis, New York, John Wiley and Sons, 1921.

Dispensary patients are tested, and no one with a disappearance time under sixty minutes is considered to be in good condition, regardless of all other clinical findings (Chart 3).

The significance of the markedly short disappearance time in the leg as compared with that in the arm in some cases calls for discussion. In seeking an explanation for this difference, the probability that a circulatory disturbance in the leg might be the determining factor

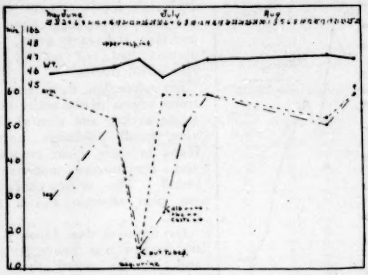

Chart 3.—Observations in Case 3; no edema during this attack; August 24, urine negative.

suggests itself. This fits in both with Fischer's contention that the tissues' affinity for water is increased with impaired circulation, and with certain observations that we have made in cardiac cases with relatively slight decompensation, in which the disappearance time of the leg was reduced much more than that of the arm. We have found the disappearance time of the arm a more reliable index of the degree of general intoxication than the time of the leg, probably because the arm is less liable to local influence consequent on circulatory disturbance. In indicating a relapse, the reduction of the disappearance time of the leg may precede that of the arm, especially when the patient is up and about in the ward. Probably a slight circulatory insufficiency in the leg, plus the general intoxication, makes the leg test more sensitive in this instance. With general edema and ascites established, however, we have found the arm time of much more prognostic value. It may be increased long before that of the leg; and, if this increase is considerable, a good prognosis as to the anasarca has been justified. We think that the increase of the leg time in these cases is delayed because of insufficient circulation resulting from pressure due to the ascites.

The accompanying charts of six of the cases included in this report will illustrate the prognostic use of the test.

REPORT OF CASES [5]

CASE 1.—L. G., a girl, aged 10 years, who entered the hospital, Feb. 16, 1923, three weeks previously had had tonsillitis followed by a purulent nasal discharge. During the week before admission, puffy face and "smoky" urine were noted by the parents. On admission she had a generalized anasarca, albuminuria, hematuria and cylindruria.

Up to April 15, her chart shows the usual type of curve seen with loss of edema, except that the disappearance time did not reach normal. At this time we had not yet determined the normal disappearance time, or she would not have been permitted to go home. On discharge from the hospital, the urine contained an occasional red cell and a faint trace of albumin. There was no edema.

When the patient was seen about ten days later there was a short disappearance time, edema and marked albuminuria. While at home, an acute upper respiratory infection with otitis media had developed. With hospital care the disappearance time increased to more than sixty minutes, and the patient's weight, after a slight drop during the first month, began to increase. We assumed that this gain was due to increase of normal tissue because of the increasing disappearance time and absence of evident edema. Subsequent events have proved this to be true, although she still has albuminuria.

The drop in disappearance time on the leg (Oct. 3) occurred when the patient was up and about. We attributed this to insufficient circulation in the leg, since the pulse was rapid and since with two weeks' rest in bed the time returned to normal.

CASE 2.—V. C., a boy, aged 8 years, began to "swell up" three weeks before admission, and had infrequent urination, vomiting and nosebleed. Previously there had been no illnesses except an occasional sore throat. On entrance he had a very marked anasarca, albuminuria and cylindruria.

Chart 2 demonstrates the tendency of the weight and disappearance time curves to cross during decrease and increase of edema, whereas in a period of improvement from August 22 to September 28, the curves are for the most part in the same direction.

The marked drop in the leg time, October 4, was unassociated with any new symptom or clinical finding. The patient was put to bed. October 11, the time for the arm had dropped and that for the leg was somewhat increased. Through a misunderstanding, tonsillectomy, planned for a later date, was done under ether anesthesia, October 15. The curves show graphically what happened. Both disappearance time curves dropped, and the weight increased 6¼ pounds (2.8 kg.) in seven days. An abscess of the left eyelid was incised, October 25. October 29, in spite of continued edema as shown by the weight curve, the arm time was normal and that of the leg was twenty-three minutes, indicating a good prognosis. (Impaired circulation in the leg due to pressure from the ascites probably retarded the return of the leg time to normal.) Rapid loss of edema, with marked improvement in the general condition, followed. Albuminuria persisted until November 22, since which time it has been absent in all urinalyses made.

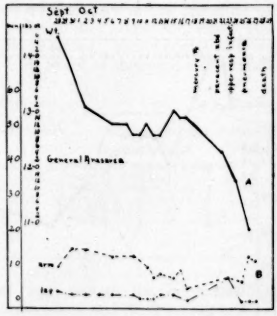

Chart 4.—Observations in Case 4: *A*, ascites; edema, leg only; *B*, cardiac failure.

CASE 3.—G. F., a boy, aged 7 years, had had a severe "cold" eleven months before the first observations, recorded in Chart 3, followed by a period in which his face was puffy in the morning. This attack cleared up. Eight months later he "began to swell again," and the urine was scanty. He also had a cough. On admission to the hospital three weeks later, he had generalized edema, ascites, pleural effusion, bronchitis, marked albuminuria and cylindruria. Blood pressure and blood chemical examinations were normal. The edema disappeared in two and one-half weeks. Tonsillectomy was performed. One subsequent attack of edema occurred while the patient was in the hospital. On discharge to dispensary care, he had a slight albuminuria. The observations recorded in the chart were made subsequently in the dispensary.

5. The test in these cases has indicated correctly: (1) a favorable prognosis while an edematous patient was actually gaining weight (Chart 5, November 8); (2) an unfavorable prognosis while edematous patients were losing weight (Charts 4 and 6, January 29).

While the leg time was short, May 29, and both arm and leg time were somewhat low, June 16, he was allowed to continue ordinary school boy activities, since there were no other untoward clinical signs. June 24, however, there was a marked drop in both arm and leg time. The patient had a mild upper respiratory infection, but no fever was found while he was in the dispensary. A specimen of urine examined at this time contained no albumin. Fearing a recurrence of the edema because of the rapid disappearance time, we put him to bed. The fluid intake was limited, and alkaline medication and saline cathartics were given. One week later the disappearance time was markedly improved, but the urine showed much albumin, many casts, red cells and leukocytes. We felt that in spite of the urinary findings his condition was in reality improved, and treatment was continued. No palpable edema was present at any observation. Albuminuria continued until about August 26.

The test in this case suggested the need of active treatment earlier than indicated by any other clinical evidence.

CASE 4.—G. H., a boy, aged 4 months, breast fed, had been apparently well until a few days prior to the time of the first observation recorded in Chart 4. He had a rather mild diarrhea, and then "swelled up," passed red urine and began to vomit.

On admission to the hospital, he had a very marked anasarca, albuminuria, hematuria and cylindruria. He was extremely ill. During the first eight days he lost about 1½ pounds (0.7 kg.). The disappearance time, however, showed little change (indicating little change in the underlying trouble). During the next eleven days, matters grew worse. At this time a diagnosis of syphilis was made on the mother's ++++ Wassermann reaction, and mercury treatment was instituted. The weight began to drop, but the ascites increased and an abdominal paracentesis was done, October 21. On the 23d he developed a slight fever; on the 25th he had definite signs of pneumonia; and on the 28th he died. Death was probably due to cardiac failure, as the pneumonia was confined to the right side and was not massive.

During the febrile course (October 23) he almost completely lost the edema of the face, arms and trunk; the urinary output increased, but the ascites and edema of the legs and the scrotum grew worse. These changes are indicated on the chart in that the arm time increased, there was a rapid loss of weight, and the leg time dropped practically to zero.

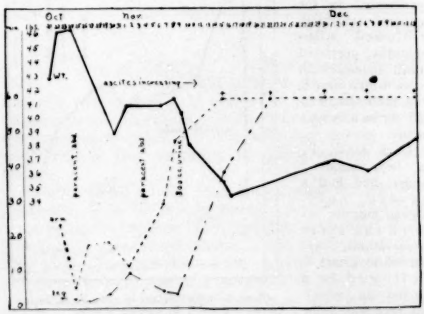

Chart 5.—Observations in Case 5.

CASE 5.—S. S., a girl, aged 5 years, while under our observation during the last eighteen months has had five separate attacks of general anasarca. During these attacks the urine has contained much albumin and many casts, and the quantity has been reduced.

We present Chart 5 because of an incident that occurred, November 8, at which time there was increasing weight, low urinary output, increasing ascites, increasing pleural effusion and decreased disappearance time on the leg, while the time on the arm showed a marked increase. Pressed for a prognosis at this time, we gave the interpretation that the general intoxication was less as indicated by the nearly normal arm time; that the reduction of the leg time was due to circulatory changes consequent on pressure from the ascites; that the ascites was probably due to elimination of water from tissues into body cavities, and that the kidneys would probably soon recover sufficiently to allow them to function again and thus relieve the situation by diuresis. As predicted, the urinary output rose in the next twenty-four hours to more than 800 c.c. The chart shows subsequent recovery.

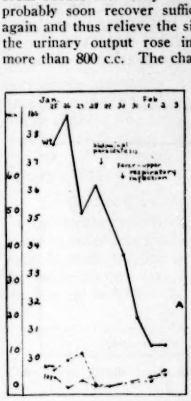

Chart 6.—Observations in Case 6: *A*, death; edema of brain; convulsions; edema marked throughout.

CASE 6.—B. Z., a girl, aged 2¾ years, for two weeks before entrance had swelling of the feet and face, and scanty urine. The parents had not noticed any antecedent illness.

On admission there was extreme edema of the entire body, slight ascites and pleural effusion, nasal discharge, normal blood pressure, clear mentality and temperature under 100 rectal. The urine contained one plus albumin and a few casts.

On the next day, January 26, the ascites was much greater, and it was noted that the edema of the legs was "puncturable"; i. e., edema fluid exuded from the needle-puncture wound. She lost 3½ pounds, or 1.6 kg. (fluid), in the next twenty-four hours, but the ascites nevertheless grew worse, and about 1,800 c.c. was removed by abdominal paracentesis, January 28. On the 29th, in spite of satisfactory elimination of fluid, the disappearance time was almost zero (ten seconds), and a guarded prognosis was therefore given. The next day the child developed a fever, otitis media and pharyngitis, and had slight chills. She rapidly grew more drowsy, vomited several times, and the blood pressure began to rise. Just before her convulsive seizure it was 115 mm. of mercury. Spinal puncture revealed fluid under increased pressure. We believe that death was due to cerebral edema, although a necropsy was not permitted.

CONCLUSIONS

The results of the application of the intradermal salt solution test to sixteen cases in children characterized by generalized edema with albumin, casts, and in some cases red blood cells in the urine, and unassociated with nitrogen retention in the blood or evidence of cardiovascular disease, seem to justify the following conclusions:

1. This test is a valuable method of determining the immediate prognosis in such cases, and shows changes earlier than are shown by any other means with which we are familiar.

2. It is an aid in directing the therapeutic management of these cases.

3. These results seem to substantiate the theories that the tissues in this type of case are active in the development of edema.

We wish to emphasize that this is not a renal function test, although increase and decrease in urinary output tend to follow similar changes in the disappearance time.

Physician Determines Individual's Health Needs.—While the official health agencies are concerned with things and conditions affecting the health of all alike and over which the individual has no control, it is the practicing physician who should determine the health needs of the individual and prescribe the measures necessary in each specific case.—W. S. Graves: *Public Health Rep.* **38**:2719 (Nov. 16) 1923.

MENINGITIS

DISTRIBUTION ACCORDING TO AGE AND ETIOLOGY *

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NEW YORK

In the recent literature a number of interesting papers have appeared dealing with the incidence of meningitis in early infancy, particularly in the first two or three months of life. A study of these papers reveals the fact that such cases are comparatively rare. Three very valuable contributions to this subject are the articles by Barron,[1] in 1918; by Root,[2] in 1921, and by Cooke and Bell,[3] in 1922. These papers contain extensive reviews of the literature and complete bibliographies. No attempt will be made in this paper to review the literature again, but references will be made to the statistics collected therein for purposes of comparison with our own tables.

TABLE 1.—*Distribution of Meningitis According to Age and Etiology*

Age	Tubercle Bacillus	Meningococcus	Pneumococcus	Streptococcus	Influenza Bacillus	Staphylococcus	Colon Bacillus	Total
3 months.....	5	24	3	11	2	0	3	48
3 to 6 months	21	58	4	6	5	0	0	97
6 to 12 mos. .	78	68	11	3	14	2	0	176
No. cases under 1 year..	104	150	18	20	24	2	3	321
1 to 2 years...	178	79	8	9	14	2	1	291
2 to 3 years...	80	36	9	6	6	1	0	138
3 to 5 years...	99	80	6	11	1	2	0	199
5 to 10 years..	96	105	16	20	3	0	1	241
10 to 20 years	57	101	7	5	3	2	0	175
Over 20 years	48	74	22	12	0	2	0	158
Totals.....	662	625	86	83	51	11	5	1,523

Since 1910, when the meningitis division of the department of health of New York City was established by Dr. W. H. Park, there has been an opportunity for the members of that division to study a rather large number of cases of meningitis. During that time there has been no epidemic of meningococcic meningitis. Therefore Table 1 represents what may perhaps be considered a normal distribution of meningitis in New York City from an etiologic standpoint. It shows 1,523 cases of meningitis arranged according to age and the more common etiologic agents.

In addition, we have seen the following cases due to more unusual organisms: Friedländer's bacillus, two patients, one aged 2 years and one an adult; *B. pyocyaneus,* one patient, aged 7 years; *Micrococcus catarrhalis,* one patient, aged 7 weeks; Streptothrix group, one patient, aged 12 years; torula, one patient, aged 16 years.

The cases due to mixed infections are as follows: meningococcus and staphylococcus, one patient, aged 9 years; meningococcus and *B. paratyphosus* B, one patient, aged 7 months; *Streptococcus hemolyticus* and *Staphylococcus albus,* one patient, aged 3 months; streptococcus, pneumococcus and staphylococcus, one patient, aged 7 years; streptococcus (nonhemolyzing) staphylococcus and unidentified gram-amphophilic coccus, one patient, aged 8 years; a mixed infection containing six organisms, which were never satisfactorily classified, the only identified pathogenic organism belonging to the *B. coli* group, one patient, aged 16 years. This makes a total of 1,535 cases.

Of this number, fifty were 3 months old or younger. It is interesting to observe that twenty-four of these cases were due to the meningococcus, eleven to the streptococcus, five to the tubercle bacillus, three to the pneumococcus, three to *Bacillus coli,* two to *Bacillus influenzae,* one to *Micrococcus catarrhalis,* and one to mixed *Streptococcus hemolyticus* and *Staphylococcus albus.* This is in marked contrast to the report of Barron,[1] who compiled from the literature thirty-nine cases of meningitis in infants under 3 months of age, and found that thirteen were due to *Bacillus coli* and only five to the meningococcus. He reported another case also due to *Bacillus coli.* In many of the cases reported in the literature, the diagnosis was made at necropsy and there is a possibility, perhaps, that the *Bacillus coli* isolated may have been an invader just before or just after death, and not the specific cause of the meningitis. Since Barron's article, other cases of meningitis in young infants, due to members of the colon group, have been reported by Greenthal,[4] Smith and Aberd,[5] Sherman,[6] and Cooke and Bell.[3] In view of our own experience, covering a relatively large number of infants under 3 months of age, we must consider *Bacillus coli* as a comparatively rare cause of meningitis in infants.

That the streptococcus is a not uncommon cause of meningitis in infants is shown by the fact that eleven of the fifty cases were due to this organism. Similar findings have already been reported by Holt[7] and Koplik.[8]

The only reference I have been able to find to tuberculous meningitis in early life is by Holt,[7] who reported three cases in infants under 3 months of age in a series of 218 children under 3 years of age.

The number of cases due to the meningococcus, twenty-four, is surprisingly large, compared with other reports. Cooke and Bell[3] reported, in 1922, that they were able to find only twelve cases in the literature of the last five years. To these they added four cases, and Root's case also should be added. Root[2] compiled from the literature thirty-four cases of meningitis in infants under 2 months of age: due to the colon bacillus, eleven; to the staphylococcus and streptococcus, nine; to the meningococcus, six; to the pneumococcus, four; to *Bacillus lactis-aerogenes,* one; to *Bacillus mucosus-capsulatus,* one; to *Bacillus pyocyaneus,* one, and to *Micrococcus catarrhalis,* one.

TABLE 2.—*Cases of Meningitis in Infants Under Two Months of Age*

	Age and Number	Total
Streptococcus.....	6 weeks, 3; 7 weeks, 2; 8 weeks, 1	6
Meningococcus.....	3 weeks, 2; 7 weeks, 1.....	3
B. coli.....	2 weeks, 1; 5 weeks, 1.....	2
B. influenzae.....	2 months, 2.....	2
Pneumococcus.....	2 months, 1.....	1
Micrococcus catarrhalis.....	7 weeks, 1.....	1
Total.....		15

For comparison with these figures, we have tabulated our own cases of infants under 2 months of age (Table 2).

* From the Division of Applied Therapy, Bureau of Laboratories, Department of Health, City of New York.

1. Barron, M.: Am. J. M. Sc. **156**: 358 (Sept.) 1918.
2. Root, J. H.: Meningococcus Meningitis with Obstructive Hydrocephalus in Newly Born, Am. J. Dis. Child. **21**: 500 (May) 1921.
3. Cooke, J. V., and Bell, H. H.: Incidence of Meningitis in Early Infancy, Am. J. Dis. Child. **24**: 387 (Nov.) 1922.
4. Greenthal, R. M.: Case of Meningitis Due to Bacillus Acidi-Lactici, Am. J. Dis. Child. **21**: 203 (Feb.) 1921.
5. Smith, John; and Aberd, M. D.: Lancet **2**: 705 (Oct. 1) 1921.
6. Sherman, De W. H.: Tr. Am. Pediat. Soc. **34**: 192, 1922.
7. Holt, L. E.: Observations on Three Hundred Cases of Acute Meningitis in Infants and Young Children, Am. J. Dis. Child. **1**: 26 (Jan.) 1911.
8. Koplik, H.: Arch. Pediat. **33**: 481 (July) 1916.

It will be seen that our youngest case was that of *Bacillus coli* meningitis in an infant, aged 2 weeks. Two cases due to the meningococcus were in infants aged 3 weeks.

It is generally recognized that meningitis is essentially a disease of childhood. It is not generally realized, I think, that so large a proportion of cases occur in children during the first year of life. It will be seen in Table 1 that far more cases of meningococcic meningitis are found in children in the first year than in any one year; indeed, that the number in the first year is nearly twice as great as that in the second year, and more even than in the five year group from the fifth to the tenth years. In all other forms of purulent meningitis also, there are more cases in infants in the first year than in any other year. In tuberculous meningitis the number of children in the second year of life exceeds that in the first year; but, taking all forms of meningitis together, the greatest number is found in the first year.

Adding together the cases of pateints under 10 years of age, it will be seen that 1,190, or more than 78 per cent. of the total number, occur in this age group.

As regards the etiologic distribution, it will be noted that more cases of tuberculous than of meningococcic meningitis have been seen. As was stated earlier, since 1910 there has been nothing approaching an epidemic of meningococcic meningitis in New York City. Indeed, since the spring of 1919, the number of cases has been extremely small. After the meningococcus, the pneumococcus will be seen to be the most common cause of purulent meningitis. Eighty-six cases were due to this organism. Eighty-five cultures from the spinal fluids of patients who had pneumococcus meningitis have been typed. A part of these were fluids sent in by physicians from patients that we did not see. Most of the patients, however, were seen by us. The results were as follows: Type I, eighteen; Type II, twenty-two; Type III, fifteen; Group IV, thirty.

The number of cases of meningitis due to the streptococcus, eighty-three, almost equals those due to the pneumococcus. *Streptococcus viridans* very rarely causes streptococcic meningitis. Practically all the cases are due to one of the hemolyzing streptococci.

Bacillus influenzae is the fourth most common cause of purulent meningitis, causing fifty-one cases in our list, with the staphylococcus and *Bacillus coli* ranking fifth and sixth, respectively. The number of cases caused by these last two organisms is very small.

Practically any of the pyogenic organisms may occasionally invade the meninges, and set up a meningitis. The same is true of the higher organisms, such as members of the streptothrix group, and the pathogenic yeasts, of each of which we have one case in our list. It will also be seen that various organisms may combine to set up mixed infections, though, in our experience, mixed infections are comparatively rare.

SUMMARY

In a list containing 1,535 cases of meningitis arranged according to age and etiology, it is seen that:

1. With the exception of tuberculous meningitis, more cases of meningitis occur in the first year of life than in any other one year. The number of cases of meningococcic meningitis in the first year of life far exceeds those in any other year.

2. The greatest number of cases of tuberculous meningitis is found in the second year of life.

3. In times when there is no epidemic, the number of cases of tuberculous meningitis equals or exceeds the number of cases of meningococcic meningitis.

4. After the meningococcus, the pneumococcus and the streptococcus are the most common causes of purulent meningitis, followed by the influenza bacillus, the staphylococcus and *Bacillus coli*, in the order named. Cases due to the last two organisms are comparatively rare.

5. Other pyogenic organisms occasionally cause a meningitis, and, more rarely, members of the higher group of organisms, such as the members of the streptothrix group and the pathogenic yeasts. Mixed infections are rare.

BACILLUS COLI SEPSIS

A CLINICAL STUDY OF TWENTY-EIGHT CASES OF BLOOD STREAM INFECTION BY THE COLON BACILLUS *

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Sepsis, or, more strictly speaking, bacteremia, is a phenomenon of infectious disease more and more frequently encountered as bacteriologic studies of the blood are more carefully made; positive blood cultures encountered in the routine laboratory work of large hospitals are now of very common occurrence. Most of the organisms found as microbic agents in blood stream invasion are commonly known pathogens, such as the typhoid bacillus, pneumococcus and staphylococcus; or such commensal bacteria as *Streptococcus viridans*, which is a normal inhabitant of the throat,[1] and *Staphylococcus albus*, which grows harmlessly on the skin surfaces—bacteria that become pathogenic only as they leave their normal fields of activity. But whereas *Streptococcus viridans* is one of the commonest organisms found in blood stream infections—the cause of the vast majority of cases of endocarditis lenta—another commensal inhabitant of the gastro-intestinal tract, the colon bacillus, is one of the least frequently encountered in septic disease. This is readily seen when one considers the relative paucity of the literature on the subject. Up to 1909, Jacob[2] collected, including thirteen cases of his own, thirty-nine authentic instances of *B. coli* sepsis, and Draper,[3] in 1910, recorded four more. Since then there have been short reports of small groups of cases from individual writers,[4] and several excellent general articles on the subject,[5] but no systematic analysis of a series of carefully observed cases. Among the records of the Johns Hopkins Hospital we have found twenty-eight cases of colon bacillus sepsis, which we have subjected to a critical analysis.

MORTALITY

Of the twenty-eight cases, two were instances of terminal blood invasion, one a miliary tuberculosis in

* From the medical clinic of the Johns Hopkins Hospital.

* Owing to lack of space, a tabulated summary of twenty-eight cases is omitted here. The complete article appears in the reprints, a copy of which may be obtained on request to the authors.

1. Bloomfield, A. L.: Am. J. M. Sc. **164**: 854 (Dec.) 1922.
2. Jacob: Deutsch. Arch. f. klin. Med. **97**: 303, 1909.
3. Draper: Bull. Ayre Clin. Lab. Pennsylvania Hosp. **10**: 21, 1910.
4. Musser: Philadelphia Gen. Hosp. Rep. **10**: 125, 1916. Wiens: München. med. Wchnschr. **56**: 962, 1909. Brian: Deutsch. Arch. f. klin. Med. **106**: 379, 1916. Widal, Lemierre and Rodin: Bull. et mém. Soc. méd. d. hôp. de Paris **44**: 963, 1920. Trémorolières and Lasnarice: Ibid. **46**: 830, 1922. Rolleston: Brit. M. J. **2**: 1186, 1911. Panton and Tidy: Lancet **2**: 1500, 1912. Pope, B. A.: Virginia M. Month. **48**: 160 (June) 1921. Holzman: Long Island M. J. **7**: 376, 1913. Von Hoogenhuyze and de Kleyon: Arch. f. Ohr, Nase, u. Kehl **102**: 184, 1917. McPherson and Losee: Bull. Lying-In Hosp., New York **2**: 100, 1917.
5. Miller: Oxford Medicine **4**: 763.

which the colon bacillus was recovered from the blood twelve hours ante mortem, the other an agonal event in a case of chronic myeloid leukemia. One other patient died in diabetic acidosis induced by a colon bacillus infection. These three cases do not figure in the mortality statistics. Of the remaining twenty-five patients, eight died, a mortality of 32 per cent., as compared with Jacob's figure of 40 per cent.

PORTAL OF ENTRY

The portal of entry was (1) the urinary tract in sixteen, or more than half the cases, twelve of which occurred in males and four in females; (2) the female genital tract in six cases; (3) the intestinal tract in two cases; (4) wound infection in one case, and (5) undetermined in three cases, of which two were terminal infections in the course of other unassociated diseases.

In Jacob's compiled cases, the biliary passages were most frequently found as the primary focus; after this in order of frequency were the urinary tract, the intestine and the female genital tract. Cases of *B. coli* sepsis in which the intestine was regarded as the portal of entry either followed acute inflammatory processes of the intestine (typhoid, dysentery, etc.) or developed subsequent to appendix abscesses with thrombophlebitis or peritonitis. Cases [6] have been reported in which intractable constipation was regarded the causative factor in the initiation of the generalized infection—an hypothesis that one is inclined to accept with considerable skepticism. Among the less common portals of entry are the skin (following the infection of wounds, and burns, especially about the buttocks) [7] and the middle ear.[8] In new-born infants, umbilical cord infections going on to *B. coli* sepsis present a syndrome known as Winckel's disease.

AGE AND SEX

The factors of age and sex have been studied in relation to the portal of entry and the mortality incidence. In this analysis we have excluded two cases of terminal infection, and one case in which death was due primarily to diabetic acidosis rather than to the infection itself.

TABLE 1.—*Analysis of Twenty-Five Cases of B. Coli Sepsis According to Age, Sex and Portal of Entry*

Ages by Decades	Total No. of Cases	Portal of Entry	Males		Females	
			No. of Cases	No. of Deaths*	No. of Cases	No. of Deaths
11-20	4	Urinary	2	0	..	..
		Undetermined	1	0	..	..
		Genital	..	..	1	0
21-30	8†	Urinary	1	0	3	0
		Genital	..	..	2	1
		Intestinal	..	..	2	1
31-40	4	Urinary	1	1	..	..
		Genital	..	..	3	2
41-50	2	Urinary	2	1	..	..
51-60	1‡	Urinary	1	0	..	..
61-70	5	Urinary	5	1	..	..
71-80	1	Wound infection	1	1	..	..

* Mortality, 32 per cent.
† One case omitted from this decade (terminal infection).
‡ Two cases omitted from this decade (one terminal infection and one case in which the patient died in diabetic acidosis with B. coli sepsis).

Of considerable interest is the relation of the incidence of the disease to the child-bearing period of women (from 21 to 40), and the old age period of men (from 51 to 80). Of the twelve cases occurring in the third and fourth decades, ten occurred in women, and in eight of these the genito-urinary tract was the portal of entry. No case occurred in women after the age of 40, whereas nine of the fourteen cases in males occurred after the fourth decade, eight of them starting as urinary tract infections. The prevalence of cystitis and pyelitis due to prostatic obstructions in the middle and old age periods is well recognized, and explains the frequency with which the urinary tract was found as the portal of entry, and, as a corollary, the increased incidence of *B. coli* sepsis in men in the latter years of life, in contrast to its occurrence in women during the child-bearing period.

TABLE 2.—*Analysis of Twenty-Five Cases of B. Coli Sepsis According to the Presence or Absence of Recognized Immediate Predisposing Factors (Especially Operative Intervention)*

Portal of Entry	Total No. of Cases	Spontaneous Invasion		Onset After Interference	
		Living	Died	Living	Died
Urinary	15	5	0	7	3
Genital	6	1	0	2	3
Intestinal	2	0	0	1	1
Undetermined	1	1	0	0	0
Wound	1	0	1	0	0
	25	7	1	10	7

FACTORS PRECEDING ONSET OF BLOOD INVASION

As a rule, the colon bacillus does not tend spontaneously to invade the blood stream from its focus of infection. However, in some instances, as in severe cases of pyelonephritis [9] or puerperal infection, the organisms have been found to pass unchecked into the vascular system. Such spontaneous invasion was present in only eight, or 32 per cent., of our cases. In the remaining 68 per cent. of the cases, some operative procedure, such as cystoscopy, or surgical trauma in an already infected field, immediately preceded the blood invasion. However, on careful analysis, in each instance in which death occurred following some operative manipulation, the local lesion was apparently an extensive one. It would seem, therefore, that the fatal outcome was due rather to the serious focal lesion than to the dissemination of the organisms into the circulation. On the other hand, in the cases in which the local infection was apparently less severe, and colon bacilli were found in the blood after manipulation, the bacteria were promptly removed from the blood stream, and recovery ensued.

Thus, while it is important to recognize the fact that a large number of cases of colon bacillus sepsis follow some manipulation of an infected focus or tract, it appears that it is the extent and severity of the local infection rather than the infection of the blood stream which is of prognostic significance.

DURATION OF SEPSIS

In all of our cases, colon bacilli were recovered from the circulating blood. It is not definitely known in each case how long the bacillemia persisted, because daily blood cultures were not made. However, in the cases in which daily blood cultures were made, the longest period of time that the organisms were found in the blood stream was five days. In most of the cases, positive blood cultures were not obtained more than once. In one case in which daily cultures were made, a heavy blood infection was found on two successive days, and then promptly disappeared, although the patient later

6. Widal, Lemierre and Rodin (Footnote 4); Trémorolières and Lasacarice (Footnote 4).
7. Dick: Brit. M. J. **2**: 1301, 1910.
8. Von Hoogenhuyze and de Kleyon (Footnote 4).
9. Cabot, Hugh; and Crabtree, E. G.: Surg., Gynec. & Obst. **23**: 495 (Nov.) 1916.

developed a metastatic *B. coli* bronchopneumonia and pyelitis, without further blood invasion. That the organisms disappear from the blood in many instances rather rapidly after the initial invasion is quite certain—an observation already made by many observers.[10]

GENERAL CLINICAL PICTURE

The clinical picture presented by patients with *B. coli* sepsis is not characteristic, and resembles that seen in any severe acute infectious disease. In eleven of twenty-five cases, the onset of the infection was quite sudden, while in fourteen cases it was more gradual. The beginning was marked in all cases by fever, which varied from 100 to 107 F. In seven cases, definite rigors occurred at the onset, while during the course of the disease twelve patients had chills almost daily. Sweats were present in more than half of the cases. The mental state in most cases was clear, though drowsiness or delirium were occasionally noted. The fever varies, and may be continuous, remittent or intermittent, in the average case ranging from 100 to 104. In cases uncomplicated by metastases, the average duration of fever was from seven to ten days, with a termination by lysis. No relation between the duration of fever and the outcome is to be seen, since in some fulminating cases the patients died in forty-eight hours after onset, whereas one patient survived after a period of fever that lasted sixty-six days.

TABLE 3.—*Leukocyte Counts*

Leukocytes	No. of Patients That Recovered	No. of Patients That Died
From 3,000 to 10,000	1	1
From 10,000 to 15,000	3	3
From 15,000 to 38,000	12	4
No record of white blood corpuscles	1	0
	17	8

In two cases, petechiae were noted over the face, chest and extremities, though not in the conjunctivae or mucous membranes. Extensive hemorrhages into the skin did not occur. Herpes labialis appeared in one case on the fourth day of the disease, and in two cases an extensive sudaminal rash appeared over the face and chest. Jaundice was present in three instances. Hemoglobinuria with hemoglobinemia occurred in one case in which the organism was a hemolytic colon bacillus. The occurrence of rose spots was not observed. In no case was the spleen demonstrably enlarged. There may be diarrhea with abdominal distention, but this was not the rule.

Petechiae and purpura are rather infrequent in this type of sepsis. Jaundice in the absence of detectable infection of the liver has been described, and herpes occurs infrequently. Hemorrhages in the fundi oculi have been observed.[11] One of our cases resembled that recorded by Blackader and Gilles,[12] in which there was hemoglobinemia with hemoglobinuria.

The leukocytes varied from 3,600 to 38,000. In but two cases were the leukocyte counts below 10,000, while in six cases they varied between 10,000 and 15,000. The majority of cases (67 per cent.), however, showed rather marked leukocytosis, varying from 15,000 to 38,000. In one case that showed a depression of the white cells to 3,600 at the onset of the infection, the leukocytes promptly rose to 11,000, and remained there throughout the illness.

It is generally stated that the leukocyte count in *B. coli* sepsis is normal or slightly increased. It can be seen that, in the present series, leukocytosis of a rather marked degree was the rule. Jacob observed that in his cases with most unfavorable outlook—namely, those with suppurative thrombosis of the radicles of the portal vein—a high leukocyte count was uniformly present. Hence the white count could not be regarded of prognostic value. On the other hand, it may be said that, in the present group of cases, the average cell count of the patients surviving was higher than in those succumbing. Thus, a marked leukocytosis seems to indicate a more favorable outlook, provided a lesion such as pylephlebitis is not present.

An analysis of the leukocyte counts is summarized in Table 3.

METASTASES

Five, or 20 per cent. of the twenty-five cases showed definite metastatic lesions, which were proved by bacteriologic examination or by necropsy. Four other patients had bronchopneumonia with bloody sputum, of which bacteriologic studies were not made, so that proof of their metastatic origin (infected emboli) is lacking.

The two organs most frequently attacked were the lungs and kidneys. Bronchopneumonia and septic infarction of the lung were the common pulmonary lesions, and pyelonephritis and pyelitis, the common renal lesions. No instances of endocarditis were encountered.

It is of interest to note that eight of the eleven fatal cases showed no signs of metastases, whereas the other cases showed metastatic lesions in the lungs and kidneys. In only two of the seventeen patients that survived were metastases proved to be present. One of these had pyelitis and bronchopneumonia due to the colon bacillus, after a puerperal infection by this organism. The urine prior to the blood invasion was clear and sterile. Two days after the bacteremia, there was pyuria with *B. coli* bacilluria. This patient subsequently recovered completely. The other patient in this group developed a pyelitis after a *B. coli* puerperal infection. The four patients with bronchopneumonia, without bacteriologic studies, recovered.

Metastic lesions occurred in one half of the cases in which the portal of entry was in the female genital tract, once each when the urinary and the intestinal tract was the portal of entry. It would seem that the portal of entry may determine in some instances whether or not metastatic lesions may follow. Since thrombophlebitis of the uterine veins is common in puerperal infection, one might expect that pulmonary metastases would occur more commonly from this portal of entry than from others less often the site of thromboses.

TABLE 4.—*Metastases in Relation to Portal of Entry*

Portal of Entry	Total Cases	Cases with Metastases	Cases with Possible Metastases (Clinical Evidence)
Urinary	15	1*	4†
Genital	6	3‡	0
Intestinal	2	1§	0
Wound infection	1	0	0
Undetermined	1	0	0

* Infarct of lung.
† Bronchopneumonia.
‡ (1) lung; (2) kidney; (3) lung and kidney.
§ Lung and kidney.

Metastases in cases of *B. coli* sepsis are not as frequently encountered as in cases of sepsis due to pyogenic

10. Jacob (Footnote 2). Lenhartz: Die septischen Erkrankungen, Vienna, 1903, p. 301.
11. Lenhartz: München. med. Wchnschr., 1907.
12. Blackader and Gilles: Tr. A. Am. Phys. **21**: 268, 1906.

organisms such as the staphylococcus, steptococcus or pneumococcus. The incidence of metastatic lesions in *B. coli* sepsis is given as from 20 to 25 per cent. by authors such as Lenhartz,[10] Jacob [2] and Jochmann.[13] The organs most frequently involved are the lungs and kidneys, although metastatic lesions have been described in the endocardium, pericardium, meninges, liver, spleen and thyroid. The bones and joints are very rarely affected. Abscess formation in the skin and muscles is a very uncommon occurrence.

REPORT OF CASES

A summary of the twenty-eight cases of this series is given in Table 5. A more detailed report is given of three cases, which presented certain typical or interesting features of *B. coli* sepsis.

CASE 20.—A white girl, aged 17 years, who was eight months pregnant, entered the hospital on account of eclamptic convulsions. Labor was induced and a phlebotomy was done in order to combat the eclampsia. The day following delivery, she had a severe chill, with fever of 102.4, and she became extremely ill. The leukocyte count was 19,000, with a polynucleosis of 85 per cent. Urine examination at this time was negative. Blood cultures showed *B. coli* in pure culture. The fever continued, and, on the third day of the illness, the patient became jaundiced, and the urine contained bilirubin and *B. coli*. Uterine cultures also showed *B. coli* in large numbers. The blood became sterile three days after the onset of the illness, but the patient continued to have fever, and pyuria with bacilluria, until the fourteenth day, when she developed signs of a bilateral bronchopneumonia and began to cough up an abundance of greenish-yellow sputum, which contained numerous *B. coli*, and pneumococcus Type IV. The fever gradually subsided, and the pneumonia cleared. The urine became clear and sterile. The patient left the hospital in excellent condition, and has remained well.

CASE 7.—A white man, aged 29, who had had pain in the back and periodic attacks of renal colic with hematuria for seven months before coming under observation, on several occasions had had very severe attacks of abdominal pain with fever, sometimes lasting several weeks. He entered the hospital on account of pain in the back. His temperature was normal; the leukocyte count was 9,600. The urine contained pus and *B. coli*. There was a partial obstruction of the right ureter, owing to a calculus.

Cystoscopy was performed, and twelve hours later the patient had a severe chill, with fever reaching 104. The leukocytes rose to 16,000 and *B. coli* was isolated from the blood in pure culture. The temperature remained elevated for eight days, gradually returning to normal.

After the temperature had been normal for two days, the calculus in the right ureter was removed. The patient improved rapidly, and left the hospital quite well.

CASE 23.—A housewife, aged 32, who had had an abortion performed by a criminal abortionist two days before she entered the hospital, presented herself on account of vaginal bleeding, violent abdominal pain and nausea. She had been ill for approximately twenty-four hours before coming to the clinic. On examination, she was extremely ill and appeared prostrated. She complained bitterly of abdominal pain. The temperature was elevated to 104; the pulse was accelerated and the skin was a dark reddish brown. There was rather marked abdominal distention, with tenderness over the entire abdomen. There was a bloody discharge coming from the vagina. The leukocyte count was 14,000, with a polynucleosis of 85 per cent. The urine was scanty, but a catheterized specimen showed a pure culture of *B. coli* and abundant hemoglobin but no bilirubin. Blood culture contained a pure growth of a hemolytic colon bacillus, and the blood serum contained large quantities of free hemoglobin. The patient was desperately ill and became progressively worse, went into general collapse with a temperature of 107, and died twelve hours after entering the hospital. Necropsy revealed a puerperal uterus with retained membranes, and a terminal invasion of the organs with *B. welchii*.

13. Jochmann, in Mohr and Staehelin: Handbuch der innere Medizin 1: 700.

COMMENT

The significance of colon bacillemia is in no way different from that of many other acute cases of generalized infection. The blood stream is invaded by overflow from a focal reservoir—the seat of a more or less severe localized infection. There is little ground for the assumption that the bacillus either persists in the blood in the absence of a primary focus or actively multiplies in the vascular stream, except in terminal infections, but, on the contrary, it is removed from the circulation either by its destruction through the protective agencies of the body or by metastatic focalization in other tissues—an occurrence far less frequent than in septic infections due to the common pyogenic organisms. Thus, the determination of the generalized infection is important, and the phenomenon is impressive; but its significance is to be considered only in the light of the origin of spread. In other words, the bacteremia would indicate the inability, for the time being, of the local protective mechanism to wall the offending bacillus within the infected focus. That this failure of the local protective mechanism is very transitory in many cases is demonstrated by the benign brief course of "catheter fevers," which are commonly regarded as blood stream invasions by the colon bacillus or by staphylococci. Indeed, in most of the cases here reported, the duration of bacteremia was short, and the course during the phase of generalized infection not appreciably more severe than in many cases of localized infections in which the blood remains sterile. With Miller,[5] we are inclined toward the view not only that the symptoms of the generalized infection are difficult to differentiate from those due to the local process, but also that the prognosis depends largely on the character of the primary focus. In short, the essential feature is the extent, severity and amenability to treatment, of the local process rather than the sepsis itself.

SUMMARY

A clinical analysis of twenty-eight cases of colon bacillus sepsis indicates that:

1. Infection of the blood stream by *B. coli* is relatively uncommon, as compared with bacteremia due to other common pathogens.

2. In order of frequency, the chief portals of entry were the urinary tract, the female genital tract and the intestinal tract. No instance of sepsis following biliary tract infection was observed in this series.

3. *B. coli* sepsis occurred much more frequently in women during the child-bearing period (from 20 to 40), and in men during middle and old age (from 40 to 70). This corresponds to the increased incidence of *B. coli* infections of the genital and urinary tracts during these age periods in women and men, respectively.

4. Operative manipulation is often a factor preceding, and possibly initiating, the blood stream invasion.

5. Of chief importance in prognosis is not the sepsis itself, but rather the extent, severity and location of the primary focus.

6. The colon bacillus usually disappears from the blood stream very rapidly.

7. In this series, a high leukocyte count (from 15,000 to 38,000) was a favorable prognostic sign.

8. Metastatic lesions occurred in one fifth of the cases. They were relatively more frequent in cases of genital tract infection.

9. The mortality was 32 per cent.

IMMUNOLOGIC OBSERVATIONS IN AUTUMNAL HAY-FEVER

WITH SPECIAL REFERENCE TO TREATMENT *

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The preventive treatment of autumnal hay-fever by means of desensitization is lacking in uniformity. Scheppegrell [1] and his followers have for years advocated simplicity in the treatment of hay-fever. Thus, he has divided the hay-fever pollens into four groups, and has expressed the belief that a pollen extract made from any member of a group would be applicable to other members of the same group. According to this view, a pollen extract of the short ragweed may well be employed for the prevention of hay-fever caused by the giant ragweed, *Gaertneria, Iva* or *Xanthium*. Commercial establishments have complicated the situation by encouraging the use of a mixture of pollen extracts, derived from the short and the giant ragweeds, from goldenrod and from corn. Still more complex has the matter of prophylaxis become through the practice of desensitizing the patient against several of the pollens that have yielded positive skin reactions. The phenomenon of group reaction is now well recognized, as cases of autumnal hay-fever are likely to give positive skin reactions with many of the pollens of the large family of *Compositae*.

The greater the number of pollens of *Compositae* used in testing, the greater will be the number of positive skin reactions in autumnal hay-fever victims. The patient, accordingly, becomes a target for injection with as many extracts as are available for testing and treatment. The most common pollen extracts are those of the ragweed, giant and short, goldenrod, dahlia, goldenglow, sunflower and daisy. At present, the prophylactic treatment varies from the administration of a single extract of the ragweed to the simultaneous injection of several pollen extracts, derived from insect and wind pollinated *Compositae*. The purpose of this work is to present some immunologic observations in cases of autumnal hay-fever, which have an important bearing on treatment.

The fall type of hay-fever has been selected for this study because it presents fewer complications than the spring or vernal type. In the District of Columbia, two species of *Ambrosiaceae*, the short and the giant ragweeds, grow in abundance and are the important factors in the causation of late hay-fever. The insect-pollinated representatives of *Compositae*, such as goldenrod, dahlia and sunflower, cannot be seriously considered in this connection. Their pollen grains, relatively few in number, are adapted for insect transportation. Accordingly, the treatment of autumnal hay-fever in the district becomes restricted to the use of extracts of either the short or giant ragweed or of both of them. Which shall it be?

Valuable information is derived from the history of the dates of onset and of termination of autumnal hay-fever. The dates of onset vary from August 10 to August 20. The dates of termination are the middle of September, from the 15th to the 20th, October 1, or the advent of the first killing frost. The disease in one class of patients extends from early August to the middle of September; in another class, from August 15 to the first of October; and in the third class, from late August to the first of October or the first killing frost.

The date of pollination of the giant ragweed recurs with remarkable regularity in the District of Columbia. It begins to shed its pollen on or about August 10, producing symptoms of hay-fever early in very susceptible individuals. By the middle of August, pollination is well advanced, giving rise to symptoms in the vast majority of less susceptible subjects. However, the pollinating season of the giant ragweed is short. By September 15 to 20, the plants begin to droop and die.

The short ragweed begins to pollinate in the latter part of August, and continues to do so until the first killing frost. In 1922, the short ragweed pollen was first shed, August 17,[2] and in 1923, August 19. I have on several occasions collected pollen from the short ragweed in the latter part of September, and have observed the dead and dying sentinels of the giant ragweed in close proximity. Obviously, patients who are extremely sensitive to the pollen of the short ragweed will welcome the first frost to end pollination as well as their symptoms. Others who are less sensitive will experience improvement with the gradual abatement of pollination about October 1.

The foregoing clinical data, when correlated with observations in the field, divide subjects of autumnal hay-fever into three classes: (1) those sensitive to the pollen of the giant ragweed; (2) those sensitive to the pollens of the short and the giant ragweeds, and (3) those sensitive only to the pollen of the short ragweed.

A careful history, combined with knowledge of field conditions, is likely to indicate the degree of sensitiveness of a patient and the species of the ragweeds to which such sensitiveness exists.

A classification, moreover, based on sensitiveness to the pollens of either the giant or the short ragweed is confirmed by the reaction to the first exposure of the respective pollens by patients prophylactically treated. If Scheppegrell's hypothesis of cross-protection is correct, patients with autumnal hay-fever who have received adequate preseasonal treatment with the pollen extract of the short ragweed should exhibit no symptoms on exposure to the pollens of the ragweeds, irrespective of variety. This hypothesis has been submitted to a critical analysis in the study herein recorded.

One hundred and thirty-five cases of autumnal hay-fever have been under observation during 1923. Each case presented a history of the classical symptoms of hay-fever and gave a positive cutaneous or intracutaneous reaction with the pollen protein of the short ragweed. Eighty-nine patients of the series received preseasonal treatment. Treatment was begun in May or early June, and was continued until the latter part of August. Sixteen injections constituted the course, and the doses were graduated from 2 to 5 pollen units to 1,600 pollen units. Some patients received as a terminal dose less than the desired 1,600 pollen units. A few, however, received terminal doses as high as 2,600 and 3,200 pollen units. The patient's reaction to the injection of pollen protein determined the rapidity of increase in dosage. An extract of mature pollen grains of the short ragweed was employed in the preseasonal

* Read before the Medical Society of the District of Columbia, March 12, 1924.

* From the hay-fever and asthma clinics of the Fourth District Dispensary of the United States Veterans' Bureau, Woman's Welfare Association, and the Central Dispensary and Emergency Hospital.

1. Scheppegrell, William: The Classification of Hay-Fever Pollens from a Biological Standpoint, Boston M. & S. J. **177**: 42 (July 12) 1917.

2. Bernton, H. S.: Studies in Hay-Fever: Dates of Pollination of Anemophilous Plants in the District of Columbia and Vicinity, Observed in 1922, Virginia M. Month. **50**: 41 (April) 1923.

treatment of the eighty-nine cases of the series, with three exceptions. Reference will be made to these three cases at a later time. One gram of pollen was used for each hundred cubic centimeters of extractive fluid. One cubic centimeter of the stock extract contained, therefore, the arbitrary number of 10,000 pollen units. The nitrogen content of the short ragweed extract amounted to 0.197 mg. per cubic centimeter. Moreover, ten pollen units of the extract "fixed complement." The potency of my pollen extract is attested by the results of treatment, which are embodied in Table 1.

Attention is particularly invited to the series receiving only preseasonal therapy. Translated into percentages, 40.4 per cent. of this series were practically free of symptoms, 33.7 per cent. were relieved of symptoms to the extent of 75 per cent., and 5.6 per cent. of the cases were unimproved. The members of this group, it should be emphasized, were almost equally advanced in treatment at any given time and, presumably, equally protected against the toxic action of the ragweed pollen grains.

The giant ragweed, it will be recalled, began to shed its pollen, Aug. 10, 1923. Its pollination was well advanced, August 14. Many patients with autumnal hay-fever marked August 14 as the day of onset of their distress. The short ragweed first bloomed, Aug. 19, 1923. A sufficient concentration of its pollen in the air

TABLE 1.—*Results of Treatment of Autumnal Hay-Fever, Season of 1923*

Course of Treatment	Symptoms Unimproved	Relieved 25 per Cent.	Relieved 50 per Cent.	Relieved 75 per Cent.	Symptoms None or Negligible	Total
Preseasonal	5	4	14	30	36	89
Preseasonal and seasonal	..	4	12	8	12	36
Seasonal	..	..	6	1	3	10
Total	5	8	32	39	51	135
Percentage	3.7	5.9	23.7	28.8	37.7	

was attained three days later, August 22, which was recorded as the date of onset of symptoms by another group of late hay-fever victims.

Careful inquiry was made of each patient under preseasonal treatment concerning the date on which premonitory symptoms or actual symptoms of hay-fever were first experienced. In only a few cases, the distinction between constitutional reaction following preseasonal treatment and reaction following the inhalation of pollen could not be drawn. The usual appearance of constitutional reactions within a few hours after the injection of pollen protein made a correct interpretation possible in the majority of cases. The date of the first symptoms of hay-fever, whether transitory or permanent for the season, was noted on a daily record.

Table 2 contains a summary of the information thus obtained. The table indicates that forty-two of the eighty-nine patients have shown premonitory or actual symptoms, as the case may have been, before August 19. The conclusion is warranted that the symptoms of hay-fever must have been caused by the pollen of the giant ragweed, for the short ragweed had not begun to shed its pollen during this period. Moreover, the majority of those who have been least helped by the preseasonal treatment are included in this subgroup of forty-two patients. Eighteen out of a total of twenty-three who report from 0 to 50 per cent. improvement for the season belong to those who have reacted with clinical symptoms to the shedding of giant ragweed pollen. The cross-protection afforded by the extract of the short ragweed against the toxic effects of the pollen of the giant ragweed was only partial. Had it been ineffective, there would have been recorded forty-two complete failures in the series. Also, eighteen out of thirty patients who reported 75 per cent. relief showed slight sensitiveness to the giant ragweed. Six out of thirty-six who stated that they were practically free from symptoms had still less sensitiveness to the pollen of the giant ragweed.

TABLE 2.—*Clinical Reaction of Patients Under Preseasonal Treatment with Pollen Extract of the Short Ragweed*

Results of Treatment	Number of Cases	Number of Patients Reporting Initial or Transitory Symptoms: Before Aug. 19	On and After Aug. 19	Not Reported
Symptoms unimproved	5	4	..	1
Symptoms relieved 25%	4	3	1	..
Symptoms relieved 50%	14	11	1	2
Symptoms relieved 75%	30	18	8	4
Symptoms none; negligible	36	6	{18 {12	..
Total	89	42	40	7

The analysis of patients unsuccessfully treated and of those successfully treated affords interesting evidence of a predominating sensitiveness to one or the other species of the ragweeds. Complete data are available in four of the five patients who have derived no benefit from treatment, and is shown in Table 3.

Each of the patients recorded in Table 3 received a preseasonal course of treatment in 1922 and 1923. Despite the assertion that a second course is more likely to be attended with good results, the patients asserted that no benefit was derived. The initial symptoms of hay-fever were noted by the patients, August 10, 13, 14 and 15, respectively—at a time when the giant ragweed was actively pollinating. Moreover, the minimum dose administered prior to the appearance of symptoms was 1,000 pollen units and the maximum dose was 3,000 pollen units. Similar doses of short ragweed extract have afforded complete protection in other patients for the season. Their failure to protect this small group

TABLE 3.—*Data of Patients Not Benefited by Preseasonal Course of Treatment with Pollen Extract of the Short Ragweed*

Patient	Age	Duration of Disease, Years	Date of Initial Symptoms	Dose Received Prior to Onset of Symptoms, Pollen Units	Terminal Dose, Pollen Units	Cutaneous Sensitiveness*
1	28	18	Aug. 14	1,000	1,000	G/S
2	43	9	Aug. 15	1,700	1,700	G/S
3	35	10	Aug. 10	1,100	1,400	S/G
4	60	4	Aug. 13	2,000	3,200	S/G

* G/S, cutaneous sensitiveness greater to the extract of the giant ragweed; S/G, cutaneous sensitiveness greater to the extract of the short ragweed.

indicates a lack of sensitiveness to the short ragweed pollen; and the appearance of hay-fever symptoms before the pollination of the short ragweed confirms the susceptibility of this group to the pollen of the giant ragweed.

The number of patients in whom the symptoms of hay-fever were negligible or absent totaled thirty-six. Six of this number experienced slight and transitory symptoms before August 19, twelve experienced suggestive symptoms on and after August 19, and eighteen patients were relieved from even transitory symptoms.

Therefore, it appears that in the group of failures the dates of onset of symptoms have been coincident with the pollination of the giant ragweed in 100 per cent. of the cases; whereas, in the group mostly benefited by treatment, transitory symptoms due to the pollen of the giant ragweed have been recorded in only 14 per cent. The cross-protection afforded by the pollen extract of the short ragweed against the giant was nil in the former group and questionable in the latter group.

TABLE 4.—*Dilutions of Pollen Extracts of the Giant and Short Ragweeds Used in Comparative Cutaneous Testing and Their Nitrogen Content in Milligrams per Cubic Centimeter*

	Dilution	Giant Ragweed	Short Ragweed
F	1:24,300	0.0006	0.0008
E	1:8,100	0.002	0.0024
D	1:2,700	0.006	0.0072
C	1:900	0.018	0.0218
B	1:300	0.054	0.0656
Stock A	1:100	0.162	0.197

The attempt has been made to determine the predominating sensitiveness to the pollen of either ragweed by cutaneous testing with high dilutions of pollen protein extract. Five dilutions of each extract, the short and the giant, were prepared, as shown in Table 4 from "Stock A." The dilutions, B to F, ranged from 1:300 to 1:24,300. The stock solutions were in turn made by treating 1 gm. of pollen with 100 c.c. of extractive. Each stock solution contained an equal number of pollen units. The nitrogen content, however, was greater in the short ragweed extract, and amounted to 0.197 mg. per cubic centimeter. The nitrogen content of the pollen extract of the giant ragweed was 0.162 mg. per cubic centimeter.

Comparative cutaneous tests with the dilutions of both extracts were performed in sixty-five out of the series of eighty-nine patients before the administration of the prophylactic treatments. The tests were performed as follows: One drop of each of the dilutions of short ragweed, B to F inclusive, was placed at one inch intervals along the outer aspect of the forearm. The highest dilution, F (1:24,300), was uppermost. One drop of each of the dilutions of giant ragweed, B to F, inclusive, was similarly placed along the inner aspect of the arm. A drop of extractive was placed above and between the two uppermost dilutions of pollen extract, and was used as a control. A slight, superficial scratch with a sterile needle was made through each drop, beginning with the highest dilution. The reaction was read in fifteen minutes. A positive reaction was indicated by the formation of a wheal at the site of the scratch mark. In a few cases, a zone of redness surrounded the needle scratch. The size of the wheals and the number of wheals appearing in the dilutions of each extract were recorded. This furnished a basis for determining to which pollen the patient exhibited a greater skin sensitiveness.

It is to be emphasized that the various dilutions of the pollen extracts of the short and giant ragweed contained an equal number of pollen units. The nitrogen content was slightly higher in the short ragweed pollen extract. In the two highest dilutions, the differences were negligible. The results, nevertheless, of the comparative cutaneous tests are not without interest.

Table 5 indicates that sixteen patients of the series have shown a greater cutaneous sensitiveness to the giant ragweed, forty-five a greater sensitiveness to the short, and four patients were equally sensitive to the two ragweeds. Curiously enough, two patients were more sensitive to the short and two more sensitive to the giant in the group that was not benefited by desensitization with short ragweed pollen extract. This has been shown in Table 3. Furthermore, forty-two patients experienced symptoms of hay-fever before Aug. 19, 1923. The appearance of their symptoms was attributed to the pollination of the giant ragweed. These patients presumably possessed a greater clinical sensitiveness to the giant ragweed pollen. Yet, of these forty-two patients, eight showed by the comparative cutaneous tests, previously described, a greater sensitiveness to the giant, twenty-six a greater sensitiveness to the short, and two patients possessed equal sensitiveness to both varieties of pollen. The tests were not performed in six of the group.

Seven patients of the series first exhibited clinical symptoms, August 10, which marked the flowering of the giant ragweed. Five of these manifested a greater cutaneous sensitiveness to the short than to the giant ragweed pollen protein. The tests were not performed in the remaining two members of this group.

The conclusion is warranted that the skin sensitiveness to pollen protein does not parallel the sensitiveness of conjunctival or nasal mucous membranes to identical pollen protein. A greater skin sensitiveness to the varying dilutions of giant ragweed extract does not signify, in my experience, a greater clinical sensitiveness to the giant ragweed pollen.

A classification of autumnal hay-fever subjects, based on their sensitiveness to the pollen of either the short ragweed or the giant ragweed, has been suggested by the two foregoing considerations, viz.: (1) the history of the date of onset and of termination of hay-fever symptoms, and (2) the clinical reaction on exposure to the pollens after prophylactic treatment with a potent extract of the short ragweed pollen. This classification finds confirmation in observations made by hay-fever subjects.

Patient 2, in Table 3, is a botanist. He has been a great sufferer from autumnal hay-fever for the last nine years. Unfortunately, two prophylactic courses with short ragweed pollen extract, administered in 1922 and 1923, have been of no avail. The reason for failure is intimated in his interesting report, dated Nov. 21, 1923:

> I could see little, if any, benefit from the treatments over last year or previous years. At the close of the treatment this year, when the low ragweed was shedding pollen pretty copiously, I did work among it. I was, indeed, quite hopeful, since it appeared to produce practically no reaction. However, I took a Sunday trip by train to Endless Caverns late in August and suffered intensely from the trouble which, it seemed to me, was due to the enormous areas of high ragweed in full bloom everywhere, even to the very edge of the car

TABLE 5.—*Results of Comparative Cutaneous Tests with Varying Dilutions of Pollen Extracts of the Giant and Short Ragweeds, in Group of Patients Receiving Preseasonal Treatment*

Results of Treatment	Number of Patients	G/S*	S/G*	G=S*	Tests Omitted
Symptoms unimproved	5	2	2	..	1
Symptoms relieved 25%	4	..	2	..	2
Symptoms relieved 50%	14	2	9	..	3
Symptoms relieved 75%	30	5	15	2	8
Symptoms none or negligible	36	7	17	2	10
Total	89	16	45	4	24

* G/S, cutaneous sensitiveness greater to the extract of the giant ragweed; S/G, cutaneous sensitiveness greater to the extract of the short ragweed; G=S, cutaneous sensitiveness equal to the two extracts.

tracks. By September 20, all symptoms had disappeared, and it seemed quite well established in my own mind that, if I approached the vicinity of high ragweed, all symptoms came on in full force at once.

Specific sensitiveness is, also, attested by a college professor, aged 39, who has been a subject of hay-fever and asthma for nineteen years. The onset of his annual distress varied from August 12 to 15. The middle of September marked the beginning of relief. A preseasonal course of treatment with an alcoholic saline extract of the short ragweed pollen was administered in 1922. An improvement of 50 per cent. was reported. Failure for securing a greater degree of immunity with the employment of the pollen extract of the short ragweed is thus explained in his letter:

> The season opened one week earlier than commonly. It seemed coincident with the ripening of the large ragweed. There was much of this where I was living at the time. . . . I have a belief, too, that the tall ragweed is responsible for the start of my trouble. Apparently, the short ragweed had little effect on me later in the season.

The converse obtains in the report of a botanist who has been a victim of autumnal hay-fever for the last six years. August 20 was the usual date of the onset of symptoms. August 15 and 16 of the past year, his professional work compelled him to drive through the country where the giant ragweed grew in profusion and was actively pollinating. He enjoyed absolute freedom from symptoms despite this exposure to the pollen of the giant ragweed, although he had received no protective treatment. He experienced, however, initial symptoms, August 19, the day on which pollination of the short ragweed was first noted.

The observations quoted above are of interest and of value because they have been made by trained observers—themselves victims of hay-fever. They emphasize the existence of a group of autumnal hay-fever patients who have a greater clinical susceptibility to the pollen of the giant ragweed. Two of the latter type of case had received preseasonal courses of short ragweed pollen extract without any marked relief of symptoms. The cross-protection afforded by the pollen protein of the short ragweed against the giant ragweed was nil in one case and partial in the other.

The partial cross-protection is, furthermore, well illustrated in the treatment of three patients to be described. The patients: 5, aged 51, 6, aged 21, and 7, aged 38, have been subjects of fall hay-fever for eleven, twenty and nineteen years, respectively. In each case the disease has been of relatively short duration—of early onset in August and terminating by September 15 to 20. The period of their symptoms is coincident with the flowering of the giant ragweed. Accordingly, an extract of the pollen of the giant ragweed has been used for active immunization. The three patients, moreover, have shown a greater skin sensitiveness for the high dilutions of the giant ragweed pollen protein than for those of the short ragweed.

The administration of the pollen extract of the giant ragweed constituted the first series of treatments. They were begun early, April 16 in two patients, and May 7, 1923, in the third patient. The treatments were continued until the middle of July. It then seemed advisable to replace the pollen extract of the giant ragweed with that of the short ragweed until the advent of the hay-fever season. The administration of the short ragweed pollen extract constituted the second series of treatments. Table 6 contains a summary of the two series of treatments in terms of pollen units and amounts of nitrogen that have been administered to each patient. The course of preseasonal treatment with the pollen extract of the giant ragweed was identical with that of the short ragweed which eighty-six patients had received in 1923. The initial dose was 5 pollen units, which was gradually increased according to the tolerance of the patient. The initial doses of pollen extract invariably produced marked local reactions. These consisted of swelling at and about the site of subcutaneous injection, frequently extending for a distance of from 4 to 6 inches; of redness over and beyond the area of swelling, and of itching. I have discussed, in a former publication,[3] the prognostic significance of local reactions following subcutaneous injection of protein solution. As local tolerance was acquired during treatment, the reactions became less marked. The terminal dose of 1,600 pollen units has frequently failed to excite a swelling more than 1 inch in diameter, if at all;

TABLE 6.—*Summary of Treatments*

Series 1	Patient 5	Patient 6	Patient 7
Pollen extract	Giant ragweed	Giant ragweed	Giant ragweed
Number of treatments	16	14	16
Period of treatment	April 16 to July 16	April 16 to July 9	May 7 to July 26
Total pollen units administered	5,785	3,430	7,630
Total nitrogen administered	0.092907 mg.	0.055506 mg.	0.123606 mg.
Series 2			
Pollen extract	Short ragweed	Short ragweed	Short ragweed
Number of treatments	10	11	4
Period of treatment	July 23 to Aug. 23	July 16 to Aug. 20	Aug. 1 to Aug. 16
Total pollen units administered	5,000	7,900	3,450
Total nitrogen administered	0.0085 mg.	0.15563 mg.	0.067995 mg.

TABLE 7.—*Character of Reactions Excited by Course of Treatment with Pollen Extract of Short Ragweed Subsequent to Course with Pollen Extract of Giant Ragweed*

Pollen Extract	Date, 1923	Series	No. of Dose	Dose in Pollen Units	Dose in Mg. of Nitrogen	Comment
				Patient 5		
Giant ragweed	July 16	1	16	1,400	0.02268	Final dose of giant ragweed extract; local reaction negligible
Short ragweed	July 23	2	1	300	0.00501	Local swelling 3 in. in diameter; arm sore and uncomfortable
	July 26	2	2	400	0.00788	Swelling of arm, shoulder to finger tips; swelling persisted until Aug. 1
	Aug. 1	2	3	350	.....	Very slight swelling
	Aug. 4	2	4	400	.....	No swelling
	Aug. 8	2	5	600	0.01182	One hour after injection, attack of asthma
				Patient 6		
Giant ragweed	July 9	1	14	700	0.01134	Final dose of giant ragweed extract; local swelling 1 in. in diameter
Short ragweed	July 16	2	1	500	0.00985	Local swelling 4 in. in diameter; arm uncomfortable all night
	July 23	2	2	500	.....	Local swelling 1 in. in diameter
	July 26	2	3	700	.....	Swelling of entire arm, which persisted 36 hours
	July 30	2	4	550	.....	Swelling 1½ in. in diameter
	Aug. 1	2	5	650	.....	Swelling 1 in. in diameter
	Aug. 4	2	6	800	0.01576	Swelling 2 in. in diameter; slight attack of asthma
	Aug. 7	2	7	650	.....	Swelling 1 in.; no constitutional reaction
				Patient 7		
Giant ragweed	July 26	1	16	1,600	0.02592	Final dose of giant ragweed extract; local reaction very slight; slight attack of sneezing
Short ragweed	Aug. 1	2	1	350	0.006895	Vigorous local reaction; no constitutional symptoms
	Aug. 6	2	2	700	0.01379	As in preceding

3. Bernton, H. S.: Treatment of Seasonal Hay-Fever, and Some Possible Causes of Failure, J. A. M. A. **80**: 1301-1308 (May 5) 1923.

whereas 5 pollen units at the beginning of treatment has produced a swelling of the upper arm in the same patient.

Table 7 is of importance because it indicates the character of the reactions that have ensued on substituting the pollen extract of the short ragweed for that of the giant ragweed in the three patients under consideration. According to Scheppegrell, the employment of a pollen extract of any member of a group of hay-fever plants, botanically allied, assures cross-protection for all members of the same group. This assumes a chemical identity of the proteins existing in the various pollens of the group. If this view is correct, the substitution of the pollen extract of the short ragweed for that of the giant, either in equal dose or in gradually increasing dose, should be attended with no unusual local phenomena at the site of injection.

In the case of Patient 5, 300 pollen units of the short ragweed extract was administered seven days after the final injection of 1,400 pollen units of the giant ragweed extract. Despite the decrease of 1,100 pollen units (or the equivalent of 0.02677 mg. of nitrogen) in the dose, the local reaction increased from a swelling almost negligible in size to one measuring 3 inches in diameter. The second injection of 400 pollen units of short ragweed extract produced a swelling of the entire arm from shoulder to finger tips, which persisted for six days.

Patient 6 was not as far advanced in the course of treatment with the giant ragweed extract when the substitution with short ragweed pollen extract was made. In his case, the final dose of 700 pollen units of the giant ragweed produced a localized swelling, 1 inch in diameter. One week later, the injection of 500 pollen units of the short ragweed extract gave rise to a swelling 4 inches in diameter, which made the arm uncomfortable for the night. At a later time, the administration of 700 pollen units of short ragweed extract caused a swelling of the entire arm that lasted for thirty-six hours. A similar dose of giant extract had previously produced a localized swelling 1 inch in diameter. Likewise, in the treatment of Patient 7, 350 pollen units of the short ragweed, administered five days after the final dose of 1,600 pollen units of the giant ragweed extract, excited a vigorous local reaction.

These marked local reactions, caused by relatively small doses of the pollen extract of the short ragweed, subsequent to the administration of large doses of pollen extract of the giant, cannot possibly indicate a chemical identity of their respective proteins. There must be some chemical relationship, however, between them. The initial doses of 300, 350 and 500 pollen units of short ragweed pollen extract, which were administered in the three cases of autumnal hay-fever, would otherwise have proved disastrous.

The observations described above bear a striking analogy to those made by Mackenzie and Baldwin.[4] These authors studied the exhaustion of skin reactions occasioned by various substances, such as pollens and dandruff. The intracutaneous method of injection of test substances was preferred to the cutaneous. In order to demonstrate the exhaustion of skin reactivity, the application of the test substances needs to be made at short intervals, varying from one hour to three hours. Their results indicate that "the specific reactivity of the skin may be readily abolished locally by repeatedly applying to the same site the substance to which the individual manifests cutaneous hypersensitiveness." Moreover, "the extent of area in which the reactivity is abolished is strictly limited to the site of the reaction." Their conclusion is noteworthy: "If protein to which a patient manifests cutaneous hypersensitiveness is repeatedly applied, either cutaneously or intracutaneously, at short intervals to the same area of skin, the reactivity of the skin may be abolished locally. Furthermore, this exhaustion appears to be specific, for if a patient gives positive skin reactions to two substances (i. e., proteins), biologically unrelated, the reactivity of an area of skin may be abolished for one substance without loss of reactivity for the other."

Attention is called to two differences in technic: 1. Mackenzie and Baldwin have employed the cutaneous and intracutaneous methods of injecting test substances, whereas, I, of necessity, have employed the subcutaneous method for the administration of prophylactic doses. 2. The interval between injections, by the former, has varied from one to three hours; whereas, I have made the injections at intervals of from six to seven days.

Notwithstanding these differences, it is to be emphasized that no exhaustion of subcutaneous and cutaneous reactivity was demonstrated when the protein solution of the pollen of the short ragweed was substituted for that of the giant ragweed. Exhaustion of reactivity is regarded by MacKenzie and Baldwin as an index of specificity, or evidence of identical chemical composition. The assumption that there is no chemical identity of pollen protein between that of the short and giant ragweeds is warranted by the evidence.

The three patients to whom the special study has been given have had the advantage of a course of prophylactic treatment with pollen protein of the giant ragweed. As previously noted, the clinical course of the disease suggested strongly a sensitiveness to the giant ragweed pollen. The results of the preventive treatment were as follows: Patient 5, who has been a victim of eleven years' standing, reports, under date of Oct. 15, 1923: "My treatment for hay-fever began in April and ended in August of this year. You have relieved me almost completely. For more than eight years this is the only time I have been able to remain in the district without suffering in August and September."

Patient 6, who has been a lifelong sufferer, credits the treatment with enabling him to enjoy the fall of the year for the first time, owing to complete freedom from symptoms.

Patient 7, as shown in Table 6, received a full course of treatment with the giant ragweed extract, consisting of 7,630 pollen units, and a partial course of treatment with the short ragweed of 3,450 pollen units. Only four injections of the latter were administered, as compared with ten and eleven injections in the other two patients, respectively. Under date of Sept. 2, 1923, he writes: "I have good news to report to you. I lived in the midst of giant ragweed until August 19 before there was the least indication of trouble—then only a little running at the nose, and sneezing. Then, on the 26th, I noticed it again a little more pronounced. For the last three or four days, I have had some discomfort—nose running at times, eyes smarting some a few times—just a touch of asthma last night—but all so mild compared to past years that I can scarcely believe it is true." In a later report, dated September 23, he adds: "To say that I am greatly pleased with the results of the treatment this year is stating the case mildly."

Botanic considerations, also, indicate that there is a sharp distinction between the pollen proteins of the

4. Mackenzie, G. M., and Baldwin, L. B.: Local Desensitization in Hypersensitive Individuals and Its Bearing on the Prevention of Hay-Fever, Arch. Int. Med. **28**: 722 (Dec.) 1921.

short and giant ragweeds. In the District of Columbia, the giant ragweed pollinates from August 10 to September 15 or 20. The blooming period of the short ragweed extends from August 19 to the first frost. A period of from four to five weeks, therefore, depending on climatic conditions, is common to the pollinating season of the two species of ragweeds. Despite the enormous quantities of pollen that fill the air, despite the great profusion of representatives of both varieties of ragweeds, the occurrence of hybrid forms has never been reported.[5] The specific characteristics of the protein molecule of the respective pollen grains are thus emphasized. The absence of cross-fertilization betokens failure of cross-protection.

SUMMARY

1. The dates of onset and of termination of symptoms tend to divide subjects of autumnal hay-fever in the District of Columbia and vicinity into three groups: (*a*) those susceptible to the pollen of the giant ragweed; (*b*) those susceptible to the pollen of the short ragweed, and (*c*) those susceptible to the pollen of both species of ragweed.

2. Eighty-nine patients have received a prophylactic course of treatment with a pollen extract of the short ragweed. Of this number, thirty-six, or 40.4 per cent., have been practically free of symptoms, and five, or 5.6 per cent., have failed to derive any benefit.

3. Forty-two of the eighty-nine have experienced premonitory or actual symptoms of hay-fever during the early period of pollination of the giant, and before the beginning of pollination of the short, ragweed.

4. The majority of those who have derived the least benefit from prophylactic treatment are included in this subgroup of forty-two patients.

5. Comparative cutaneous tests with varying dilutions of giant and short ragweed extracts have been performed in sixty-five patients. A greater cutaneous sensitiveness to either pollen does not signify a greater sensitiveness of the nasal and conjunctival mucosa to the same pollen.

6. Personal experiences by three competent observers indicate susceptibility to one species of ragweed and not to the other.

7. Three patients whose history has suggested sensitiveness to the pollen of the giant ragweed have been given a course of desensitizing treatment with its protein solution. The local reactions at the site of subcutaneous injection have been marked at the beginning of treatment and negligible at the termination of treatment. Subsequent injections of smaller doses of pollen extract of the short ragweed have produced extensive local reaction.

8. No hybrid forms of the two species of ragweeds *Ambrosia elatior* and *Ambrosia trifida* have been reported.

CONCLUSIONS

From the foregoing clinical evidence, it appears that there is no chemical identity of the pollen proteins existing in the short and giant ragweeds. The cross-protection afforded by active immunization with the pollen protein of the short ragweed against the giant ragweed is nil in subjects very sensitive to giant ragweed, and slight to those less sensitive. Addition of pollen extract of giant ragweed in the preventive treatment is likely to afford autumnal hay-fever subjects greater protection and assure a greater freedom from symptoms.

2013 O Street, N.W.

5. Rydberg, P. A.: North American Flora, **33**, Pt. 1.

THE HEART IN PREGNANCY*

PHIL A. DALY, M.D.
CHICAGO

For two and a half years we have conducted a medical clinic in connection with the obstetric clinics of the Chicago Lying-In Hospital and Dispensary. This was established for the purpose of cooperating with the obstetricians in the care of those women who had some medical complication of their pregnancy. Chief among the complications is heart disease.

To the clinic are referred by the obstetricians all patients who, because of symptoms or physical signs, are suspected of having cardiac disease. These patients are subjected to careful examination and observation to prove or disprove the suspicion. Only about 50 per cent. of those referred have real organic heart changes. There is another group, the frequency of which we have no means of knowing, who have no symptoms and in whom the signs may be overlooked during casual examination, who have definite cardiac disease though its existence has not been suspected. These are detected, if at all, during the course of examination for something other than cardiac symptoms.

Our studies are entirely clinical, the stethoscope and sphygmomanometer being the only instruments employed, with an occasional fluoroscopic and roentgen-ray examination to determine or rule out the existence of aortic disease.

Our patients are all service patients who can be seen as often as desired and hospitalized when and for as long a time as deemed necessary. They are referred to the medical clinic early in pregnancy, the majority before or about the sixth month, few later than the beginning of the eighth month. These two points, namely, that they are all service patients and that they come under observation early, are important considerations in the interpretation of the results obtained. We examine each woman as frequently as her particular condition seems to demand, trying, however, to observe every patient at least every four weeks. Nearly every patient is referred to the hospital for delivery, and when possible is entered a week or ten days preceding labor; they are watched during delivery, convalesce in the hospital, and are kept under observation subsequently, being examined every month or two at first and later at three to six month intervals.

The generally accepted incidence of heart disease in pregnancy is about 1 per cent. The series reviewed here represents about 0.25 per cent. of the total service patients delivered during the two years. Only those of the first two years are included because they have all been observed for at least six months subsequent to completion of pregnancy, the duration of observation in others ranging up to two and one-half years, some into a second pregnancy.

These women are not all victims of severe heart disease, nor have I included any case so mild that there might arise doubt as to the existence of real organic change, which fact will explain in a measure the low percentage of incidence noted.

Analysis of the accompanying table reveals a predominance of mitral lesions. These are divided into mitral regurgitations and mitral stenoses, no note being made of double mitral lesions; but those listed as stenoses are by a vast majority, probably all, both

* From the medical clinic of the Chicago Lying-In Hospital and Dispensary.

stenosis and regurgitation, though in a little more than 30 per cent. of them we could detect no systolic murmur of insufficiency.

Those designated as mitral regurgitations no doubt have also some anatomic stenosis, but in none of them were there clinical signs of stenosis. The diagnosis of mitral regurgitation is not made on one sign alone. The systolic mitral murmur must be accompanied by some evidence of cardiac enlargement and an accentuated pulmonic second sound, and these findings must occur in patients with a history of chorea, rheumatism or previous heart disease or who present symptoms of cardiac insufficiency. Systolic murmurs are detected at some time or other in fully 70 per cent. of the women examined, but for the most part are unaccompanied by other signs of disease, and are considered as being of no significance. With the exception of the long harsh murmur of aortitis, systolic murmurs are disregarded unless occurring as one of a group of findings indicative of organic disease.

The diagnosis of chronic myocarditis or chronic myocardial insufficiency is based chiefly on the subjective symptoms of the patient, supported by evidence of some degree of enlargement of the heart and, usually, a somewhat elevated blood pressure. These patients have been numerically more failures among the mitral stenoses, but the percentage among the aortic insufficiencies has been almost the same.

An attempt was made to connect each failure directly with its cause. This has not been very successfully accomplished. The possibility of a chronic focus of infection is always present. In three instances, failure occurred in the presence of an acute infection, but the only failures to which we could link a direct cause were those occasioned by overexertion. Of these failures, fifteen patients have recovered completely and four have not, so that, in a final analysis, a series of 117 patients shows a death rate of less than 1 per cent., and less than 3.5 per cent. of incomplete recoveries, while 96 per cent. have recovered completely as far as clinical observation for this length of time can demonstrate.

COMMENT

The literature on this subject is not abundant; during the last three years an increasing amount has appeared, which shows an awakened interest. The series have been small, the time of observation has been comparatively short, and there has been little agreement as to the seriousness of the condition. The death rate varies from 3 to 61 per cent. Mackenzie,[1] Kellogg[2] and

Heart Lesions in Pregnancy

Lesion	Number	Parity		Failures						Recovery			
		Multiparas	Primiparas	Total Patients	Pregnancy	Labor	Both	Fibrillation	Deaths	Complete	Incomplete	Interruptions	Cesarean Section
Mitral stenosis	42	28	14	12	7	1	4	4	1	29	2	1	7
Mitral regurgitation	48	37	11	4	4	..	..	..	..	48	..	..	..
Aortic regurgitation	4	1	3	1	1	..	..	..	..	3	1	..	..
Aortitis	5	3	2	..	..	..	..	..	..	5	..	..	..
Aortic regurgitation plus mitral stenosis	1	1	..	..	..	..	..	..	..	1	..	..	..
Aneurysm	1	1	..	..	..	..	..	..	..	1	..	..	..
Aortic regurgitation, mitral regurgitation and aortic dilatation	1	1	..	..	..	..	..	..	..	1	..	..	..
Aortic regurgitation plus multiple aneurysms	1	1	..	1	..	..	1	1	..	..	1	..	..
Congenital	5	1	4	..	..	..	..	..	..	5	..	..	..
Chronic myocarditis	8	8	..	1	1	..	..	..	..	8	..	..	..
Chronic myocarditis plus evidence of chronic adhesive pericarditis	1	1	..	..	..	..	..	..	..	1	..	..	..
	117	83	34	19	13	1	5	5	1	112	4	1	7

are always older than the average, and all are multiparas.

A summary of results shows 117 cases of heart disease from a total of 4,040 patients delivered at the hospital and through the dispensaries. In this series of 117 cases there occurred one death, one interruption and nineteen failures (ten partial and nine complete). The death occurred in a patient with mitral stenosis who was delivered by cesarean section under local anesthesia, suffered an acute suppression of urine, and died with uremic symptoms in about forty-eight hours. The patient whose pregnancy was interrupted also had severe mitral stenosis, passed through one pregnancy successfully, and was delivered by cesarean section and sterilized, but subsequently became pregnant, and the second pregnancy was interrupted as soon as discovered. Seven patients were delivered by cesarean section; all others were delivered from below.

Of the nineteen failures (16 per cent.), thirteen failed during pregnancy, recovered, carried their pregnancy to completion and had no further trouble, labor and delivery causing no serious embarrassment. Five failed during both pregnancy and labor, and only one suffered any undue embarrassment during labor alone. Five instances of auricular fibrillation occurred, four of which returned to normal rhythm; one persists. There

Smith[3] are among those who believe that the danger is not great, that injury to the heart is not materially increased, and that abortion is seldom indicated. Smith states that he has seen only one case demanding interruption. Pardee[4] feels that the risk is not inordinately great; that any woman with heart disease should be allowed to attempt pregnancy. He[5] estimates a general mortality of 10 per cent., with 26 per cent. in the more severe cases. Breed,[6] White[6] and Hamilton[7] are not so optimistic. Campbell[8] of Canada regards the combination as being very unfavorable, the danger great, damage considerable and length of life shortened. He believes that in every case of mitral stenosis, fibrillation and chronic myocarditis, abortion should be performed and the patient sterilized as soon as recognized. In his report of 159 cases compiled during the course of six years, he notes fourteen deaths during pregnancy

1. Mackenzie, James: Heart Disease and Pregnancy, Oxford Medical Publications.
2. Kellogg, F. S.: Boston M. & S. J. **188**: 25 (June 21) 1923.
3. Smith, S. C.: Observations on the Heart in Mothers and the New-Born, J. A. M. A. **79**: 3 (July 1) 1922.
4. Pardee, H. E. B.: Fitness for Pregnancy of Patients with Heart Disease, J. A. M. A. **78**: 488 (April 22) 1923; M. Clin. N. A. **6**: 3 (Nov.) 1922.
5. Pardee, H. E. B.: Am. J. M. Sc. **164**: 847 (Dec.) 1922.
6. Breed, William; and White, P. D.: Boston M. & S. J. **188**: 25 (June 21) 1923.
7. Hamilton, Burton: Boston M. & S. J. **188**: 25 (June 21) 1923.
8. Campbell, D. G.: Canadian M. A. J. **13**: 244 (April) 1923.

and labor, five more within a year, and a considerable number since. This variance of opinion is also found among other authors, and the divergence of opinion and disparity in results afford no basis for the estimation of the seriousness of heart disease in pregnancy.

Why should the results be so different in apparently similar groups of cases? One point that is little discussed is the time at which these patients come under observation, and therein may be contained in part the answer. The few private patients whom I have seen—always during labor or immediately following delivery—have been in extreme failure with pulmonary edema, large liver, dilated heart, cyanosis, etc.; the results have been bad—almost invariably the patient died. In the service cases coming under observation early, we have rarely encountered such extreme degree of failure, and results have been very favorable.

Our patients are referred early; they are considered as medical patients with an obstetric complication, i. e., they are women with organic heart disease who are carrying a gradually increasing burden, and they are managed as straight medical patients in an attempt to enable them to carry that burden without consuming their cardiac reserve. In accomplishing this our most important aids are:

1. The nurse and social workers connected with the clinic. It is through them that the cooperation of the patient is secured and the physician's instructions carried out. They make it possible for the patient to carry out orders by having this woman's washing done, that woman's scrubbing, or the other woman relieved of part of the care of her other children. They make it possible for the patients to eliminate such of their manual labor as the physician determines would probably be too much in addition to pregnancy.

2. The splendid hospital facilities to which we have access at all times and for as long a time as desired.

3. Competent obstetric management in termination of pregnancies.

To conserve the cardiac reserve, we have tried to increase it in the early months by judicious exercise and rest, much as one would condition an athlete. The voluntary effort is decreased in the later months—as the pregnancy increases—by degrees sufficient to allow the heart to adapt itself to the increasing load. We use complete rest and medication only when absolutely necessary, being unwilling to make an invalid out of any patient unless it is imperative. The psychic element is one that is rather important, and it cannot be ignored. Not infrequently we see patients who have made invalids of themselves, not because of physical debility, but solely through fear occasioned by the knowledge that they have heart disease.

Every patient is hospitalized for a few days preceding delivery and given nearly complete rest, so that when she enters labor she will not be so near the limit of her cardiac reserve that delivery proves the last straw. Delivery is by the quickest and easiest method. That has proved to be delivery from below, after spontaneous labor to complete or nearly complete dilatation of the cervix uteri. Those patients delivered by cesarean section with a local or general anesthetic did not seem to recover as quickly and easily as the others. At the present time cesarean section is advised only with the presence of pelvic abnormality or with the intention of sterilization. These patients take ether very well, and it has been the anesthetic of choice.

Convalescence is strict and detailed; gradually increasing exercise is ordered to the point at which the patient can walk one flight of stairs without undue embarrassment. The two to three months immediately following delivery are rather important because the mother, if unobserved and uninstructed, is apt to attempt too much manual labor in the care of her newborn. Nursing of the baby does no harm; but carrying the child, bathing it and washing for it, in addition to other household duties, tends to throw a burden on the heart often greater than the pregnancy.

CONCLUSIONS

It is apparent that the number of patients is too small and the time of observation too short to form a basis for dogmatic conclusions, but our experience with these patients has led me to believe that:

1. Nearly every woman with organic heart disease, regardless of lesion, can carry through pregnancy successfully.

2. Interruption to save life or prevent cardiac failure is rarely necessary.

3. Failure, complete or partial, can with rare exceptions be compensated and pregnancy continued.

4. Abortion or delivery in the presence of failure, unless the patient is already in labor, is unwise, because anything that is done is an insult to the already overwhelmed heart muscle.

5. There is no material cardiac damage incurred by pregnancy; i. e., after completion of the pregnancy, the heart is as efficient as it was at the beginning.

6. Prevention of trouble is accomplished early in pregnancy, not at term, during labor or delivery.

7. Delivery from below, after spontaneous labor, with ether anesthesia, affords the easiest and best means of terminating labor in those patients who have no unfavorable obstetric complications.

104 South Michigan Avenue.

Clinical Notes, Suggestions, and New Instruments

REMOVAL OF GLASS BEADS AND OTHER HOLLOW OBJECTS FROM THE LUNGS

HORACE T. AYNESWORTH, M.D., WACO, TEXAS

It is believed that a method of real merit has been developed for the removal of glass beads and similar hollow objects. So far as I know, this method has not been previously described. Recent articles by Chevalier Jackson, Ellen J. Patterson and others do not mention it.

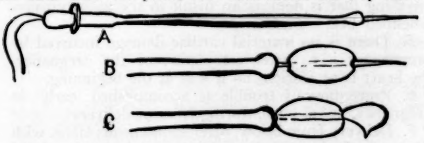
REPORT OF CASE

J. M., a colored girl, aged 6, while playing, Feb. 6, 1924, suddenly inspired into the trachea a glass bead 13 by 8 mm. This was followed by typical symptoms of dyspnea. I saw her in the afternoon of the same day and advised immediate operation. For some reason my advice was not taken, and the next I heard from her was that she was in the hospital under the care of a confrère, who, it appears, had made an unsuccessful effort at removal. Roentgen-ray examination revealed the intruder's presence in the right bronchus at the level of the fourth rib anteriorly. The bead was lengthwise in the bronchus, and the hollow through it could be made out faintly. The child was getting air through the hollow in the bead, so that the lung below was being aerated nicely, and she was not suffering to the extent usually seen in foreign body cases. She had consequently not suffered very much as a result of the unsuccessful effort at removal.

I was now asked to try to remove it. Under ether anesthesia, the bead was quickly located, but it was now on the left side and at the same approximate level as before on the

right side. The bead was firmly impacted, and all efforts with ordinary grasping forceps, of the various patterns ordinarily used, were absolutely futile, as the forceps would slip off and leave the bead even more impacted than before. Expanding forceps were next tried, but the hole in the bead was too small for their successful use. Blunt hooks and stiff wire bent at a right angle at the tip were used, made small enough to put through the hole or else be pushed outside and beyond the bead and engaged the lower end, but none would hold the bead with sufficient firmness to allow of its withdrawal. In desperation, the effort was discontinued in order to devise new methods and to permit the child to recuperate. A tracheotomy was, however, done for the purpose of later bringing us nearer the field of operation and to prevent the bad effects of subglottic edema, which we feared our prolonged efforts at removal might have caused.

The child did nicely, and one week later another effort, under general anesthesia, was made. This time I used, through the bronchoscopic tube introduced through the tracheotomy wound, a long, flexible Berger cystoscopic snare loaded with a small, but stiff, piano wire. The loop projected through the snare nearly an inch, and was obliterated by having been firmly and closely pressed together. In this state, the projecting portion of the loop was easily guided through the hole in the bead sufficiently far so that, while one wire of the loop proximal to the snare was held firmly, the other wire was pulled on. This caused the loop below



Apparatus for removing hollow objects from lungs: *A*, flexible Berger cystoscopic snare, with loop drawn to point; *B*, loop threaded through hole in foreign body; *C*, distal part of loop dilated by withdrawing one line of snare. The snare, foreign body and bronchoscope are withdrawn at one time.

the bead to bend at right angles and expand, and so hold the bead firmly while it was easily and rapidly withdrawn. The child made an uninterrupted recovery.

COMMENT

Glass beads and other similar hollow objects are very hard to remove. By this method all that one has to do is to work on the bead, if it is not already in proper position, so that its perforation presents in the lumen of the bronchus, when the removal can be effected very easily and quickly by the method described.

1307 Amicable Building.

A METHOD FOR IMPROVING CIRCULATION IN VARICOSE ULCERS

MORRIS H. KAHN, M.D., NEW YORK

The stubbornness to healing of varicose ulcers of the legs is in the main due to deficient circulation. The tissue around the ulcer becomes brawny, hard and edematous. Stasis takes place in the capillaries, and lymph edema as well as tissue edema ensues, producing capillary occlusion.

In addition to the general methods of treatment, I have found one that I have not seen previously described, which has worked with remarkable success in my experience. The method consists of slow compression of the tissue by the patient or a nurse, expressing the edema fluid from the brawny, hard area and then permitting the circulation to fill in the depression. This is done for ten or fifteen minutes once or twice a day. I have found that within two weeks the area of half the leg, perhaps, will have become normally soft and finely vascularized with normal color and normal superficial circulation. At the same time, the healing process of the ulcers maintains an increasingly rapid improvement.

140 West Sixty-Ninth Street.

REPORT OF TWO CASES OF INTESTINAL OBSTRUCTION CAUSED BY ROUNDWORMS FOLLOWING DOSAGE OF SANTONIN

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LAKE CHARLES, LA.

The cases reported here were in children less than 5 years of age, members of the same family. They occurred within a period of two weeks. The patients were brought in to us by Dr. Crawford, a colleague practicing in a nearby town, with a diagnosis of acute intestinal obstruction.

CASE 1.—E. Y., a child, aged 3 years, in whose family history there was nothing of note, had had whooping cough one year before admission, lasting seven weeks and leaving the throat in bad condition. The general health was poor. The child had always been thin and pale. The appetite was poor, the bowels were in good condition; the diet consisted of ordinary table food.

February 28, the child was taken sick with cramps in the abdomen, but became better and was up playing all day. That evening it became worse. Dr. C. was called and found the child suffering with pain in the abdomen, and some slight distention, but no tenderness or masses. The child was terribly nauseated, having vomited several times. He gave the child santonin and mild mercurous chlorid, each 3 grains (0.2 gm.), with no preliminary purgative, but to be followed in the morning with castor oil. In the morning the child was unable to retain the castor oil. Dr. C. found that the child had had one bowel movement during the night containing one roundworm. He found the abdomen distended and felt a large, sausage-like mass extending from the upper right quadrant to the lower right quadrant. He made a diagnosis of obstruction, and brought the child into the sanatorium.

The eyes reacted to light and in accommodation. The teeth were in good condition. The tonsils were enlarged There was equal expansion of the lungs; no râles were heard. The heart was not enlarged; there were no murmurs. The abdomen was distended by a large oblong mass occupying the right side of the abdomen and extending from the lower border of the liver down to the pubis. The extremities presented no abnormalities. The urine was negative except for a few hyaline and granular casts. The leukocytes totaled 12,775, of which large lymphocytes numbered 4 per cent.; small lymphocytes, 15; neutrophils, 77; basophils, 2; eosinophils, 2. The pulse rate was 140; respiration, 38; there was no elevation of temperature.

Under nitrous oxid-ether anesthesia, a right rectus incision was made which revealed a large, distended, obstructed bowel, identified as the ileum about 20 inches from its distal end. This was delivered through the opening in the abdomen, where by palpation it was easy to make out that the obstruction was due to worms. After thorough precaution had been taken to prevent contamination of the peritoneal cavity, a longitudinal incision was made into the ileum, and forty-nine roundworms were removed with tissue forceps. About two thirds of these worms were dead; the live ones were interwoven with the dead ones, forming a mass. The intestine was closed with a two layer Lambert linen suture; the wound was washed with ether, and the abdomen was closed with the usual three layer suture without drainage.

The child made an uneventful recovery, and was discharged from the hospital ten days later.

CASE 2.—L. Y., a boy, aged 4½ years, had had whooping cough one year before, with no complication. The general health was good, but the child had always been thin and pale. The appetite was good. The bowels were in good order. The diet consisted of ordinary table food.

About 1 a. m., March 14, the child was seized with vomiting, and pain in the abdomen. Dr. C. found that the child had passed one worm about a month before. The child was not feverish, but was somewhat nauseated. He gave santonin and mild mercurous chlorid, each 4 grains (0.26 gm.), to be followed in two hours with castor oil. By noon, March 14, the child had passed one worm, but was vomiting, and complained of severe cramps in the abdomen. Dr. C. returned

and found a large, sausage shaped mass in the left side of the abdomen. He made a diagnosis of acute intestinal obstruction, and brought the child into the hospital.

The child was undernourished. There was no general adenopathy. The pupils were equal, and reacted to light and in accommodation. The teeth were in good condition. The tonsils were not enlarged. There was equal expansion of the lungs; no râles were heard. The heart was not enlarged; there were no murmurs. The pulse rate was 150; respiration, 42. There was no elevation of temperature. The abdomen was distended, a large, oblong mass occupying the whole of the left side. The extremities presented no abnormalities. The urine was normal. The leukocytes totaled 10,425, of which polymorphonuclears numbered 83 per cent.; small lymphocytes, 14; eosinophils, 3.

Under nitrous oxid-ether anesthesia, a left rectus incision was made, which exposed a large, oblong mass identified as the ileum about midway of its length. Coils of worms could easily be detected by palpation. The bowel was delivered and a longitudinal opening was made, through which fifty-three roundworms were removed with tissue forceps. The majority were dead. The live ones were interwoven with the dead, forming a mass that could not pass down the bowel. The ileum was closed with a two layer Lambert suture. The wound was washed with ether, and the abdomen was closed in the usual manner without drainage. The child was very listless for the first three days, noticing no one. Proctoclysis of saline solution and glucose was given every three hours, and on the third day an enema, with good results. Except for a slight elevation of temperature, the child was in good condition. On the ninth day the sutures were removed, revealing a slight infection in the lower angle of the wound. This cleared up in a few days.

The patient was discharged from the hospital on the fourteenth day, in good condition.

COMMENT

The unusualness of two virtually identical cases occurring in the same family within a period of two weeks is noteworthy.

Both children received a large dose of santonin without preliminary preparation. Had they received purgation and a starvation diet twenty-four hours in advance of the vermifuge, would this have occurred?

Would it not have been better to give smaller doses of santonin, to be repeated at stated intervals until the stools no longer showed ascarids?

SALIVATION DUE TO INTRAVENOUS USE OF MERCUROCHROME

J. C. BUNTEN, M.D., AUGUSTA, KAN.

In a recent issue of THE JOURNAL there was an article,[1] on the intravenous use of mercurochrome-220, soluble in septic cases. The reports were brilliant, but there was nothing said of any unpleasant effects from this form of treatment. I report two cases in which very pronounced salivation developed.

CASE 1.—E., a man, aged 21, entered the hospital in a critical condition, suffering with a bilateral lobar pneumonia. The temperature was 105 and he was delirious. We treated him several days without much change; as the fever remained high, we decided to give him some mercurochrome intravenously. The first dose was 10 c.c. of a 2 per cent. solution. In forty-eight hours this dose was repeated. Two days later the patient had a pronounced salivation, loose teeth, gums bleeding and pain. In about a week this condition cleared up. The patient recovered from the pneumonia, and developed an empyema on the right side, which was drained. He left the hospital four weeks later, feeling fine.

CASE 2.—M., a man, aged 40, entered the hospital with an abscess of the right kidney; he was suffering with a great deal of pain. The kidney was removed, the left kidney having previously been found to be normal. Following the nephrectomy he drained a good deal, and there was a large infiltrated area the size of the palm of the hand in the region of the scar. This was treated in the usual way for two weeks, but a considerable area persisted. I then gave him 10 c.c. of a 1 per cent. solution of mercurochrome intravenously. Forty-eight hours later he received another dose of 10 c.c. Two days later he came in with a very severe salivation, all the teeth loose, the gums spongy, and suffering a great deal with aching of all the teeth. The pain was so severe that we had to keep him on narcotics for three days. The condition cleared up in a week. The area in the side has given him no further trouble, and seems to be entirely healed.

In both of these cases, the results from the use of the mercurochrome, as far as the original pathologic condition was concerned, seemed to be very satisfactory, though the salivation proved very distressing for a time. I am of the opinion that the intravenous use of mercurochrome-220 soluble in septic cases is worthy of trial, especially in grave cases, but one will have to bear in mind the possibility of salivation for a time. These patients always have a reaction following the doses, and the reaction following the first dose is always greater than the succeeding ones. Usually there is headache, increase in temperature, perspiration, and frequently nausea and vomiting.

1. Young, H. H., and Hill, Justina H.: The Treatment of Septicemia and Local Infections by Intravenous Injections of Mercurochrome-220 Soluble and of Gentian Violet, J. A. M. A. **82**: 669 (March 1) 1924.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CRYOGENINE.—Phenylsemicarbazide.—$C_6H_5.NH.NH.CO.NH_2$.

Actions and Uses.—Cryogenine is an antipyretic and analgesic. It is claimed that cryogenine does not affect digestion and that it has scarcely any effect on the circulation and respiration. After administration of cryogenine, the urine is highly colored, but it is claimed to be without deleterious action on the kidney.

Cryogenine is claimed to be useful as an antipyretic in febrile conditions. As an analgesic, it is said to be of value in rheumatism, headache, sciatica, gout and in painful conditions generally.

Dosage.—As an antipyretic, 0.25 to 2 Gm. (4 to 30 grains) per day. As an analgesic, from 1 to 3 Gm. (15 to 45 grains) per day.

Manufactured by Sestier, Pharmacist, Lyons, France (A. Lumiere Laboratories New York, distributor). No U. S. patent. U. S. trademark 67,918.

Cryogenine Tablets 0.5 Gm.

Cryogenine is a white crystalline powder; odorless; taste slightly bitter. It is soluble in about 100 parts of water at 20 C.; soluble in ether, acetone, chloroform and benzene. It melts at 172 C.

Cryogenine reduces potassium permanganate solution with precipitation of manganese dioxide; it also reduces iodates in alkaline solution, potassium bichromate and alkaline cupric tartrate solution. Add a few drops of alkaline cupric tartrate solution to 5 Cc. of a saturated aqueous solution of cryogenine. A green coloration results. On heating, a red precipitate results.

NEOARSPHENAMINE (See New and Nonofficial Remedies, 1924, p. 49).

Neoarsphenamine-Mallinckrodt.—A brand of neoarsphenamine-N. N. R.

Manufactured by the Mallinckrodt Chemical Works, St. Louis.

Neoarsphenamine-Mallinckrodt, 0.15 Gm. Ampules.
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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 3, 1924

ALCOHOL AND THE GERM PLASM

The harm that alcohol may do to a person in a variety of ways is beyond dispute. Not even the most ardent advocate of alcoholic beverages would defend the behavior of the confirmed drunkard, or deny the debasing effect that drink has exerted on thousands of persons. Such degeneracy has varied aspects, social and economic as well as physical. Yet a world-wide experience gives a sense of injustice to confusing the occasional consumer of alcoholic fluids indiscriminately with the "rum sot." Civilized man does not approve the saloon; but it would be rash to say that the taking of a glass of wine (where no legal proscription exists) constitutes a mark of uncivilized conduct. In view of the millions throughout the world who do not hesitate to drink alcoholic beverages, it is quite proper to ask whether the use of alcohol during past generations has actually injured the physical or mental quality of present generations. Or, has its use actually benefited or improved the quality of the present generations? These are, as Stockard [1] of Cornell has pointed out, fundamental questions and are not to be answered in the realms of religion, politics, sentimentalism or prejudice. They are, as he adds, scientific questions and are to be answered only by careful investigation.

Human records of alcoholism are likely to be complicated by extraneous factors. The scientist insists that until individuals of the most vigorous physical stocks have acquired severe alcoholism and later mated with similar vigorous persons to give rise to abnormal offspring, we cannot be certain that human alcoholism has produced degeneracy. This circumstance induced Stockard long since to study the problem through the medium of animal experimentation. A unique value of his remarkable records lies in the fact that they now involve the history of so many generations that tentative conclusions seem justified. Students of the problem of racial degeneracy should study the work in detail. The alcoholization of the first generation was severe, involving almost daily exposure for several years to the fumes of alcohol to the point of intoxication. This did not noticeably injure the health or shorten the life of the treated animals. The injurious effects on some of the germ cells were readily noted by comparing the offspring from the same normal individuals when paired with normal and alcoholic mates. It is noteworthy that parental alcoholism increased the elimination of the weaker members of the progeny, many of them having succumbed before being born. The prenatal mortality consisted of abortions, uterine absorptions and still-born young. The records of Stockard's investigations show that there is an excessive elimination of the weaker individuals among the grandchildren of alcoholic animals, and the elimination is chiefly exaggerated before birth. In the third filial generation away from the alcoholic treatment, the affected germ cells are still being eliminated by early death of the embryos and young individuals, but the animals that survive produce offspring that actually average better than the control stock. Presently, in a succeeding generation, all the weak and altered germ cells have become eliminated from the lines, and a group of superior animals results.

In this study it has become difficult to avoid the conclusion that alcohol has acted as a selective agent to bring out a group of unusually strong specimens. Although they were possibly not quite so productive as the control lines, they show a record superior in vitality. Should one desire to apply these experimental findings to the human alcohol problem, Stockard argues, it might be claimed that some such elimination of unfit individuals has benefited the races of Europe. All the dominant races there have a definite alcohol history, and the excessive use of alcohol was decidedly more general a few generations ago than it is today. Much of the present-day philanthropic activity tends to protect individuals from the processes of natural elimination, and civilization has tended to remove the agencies of severe natural selection. The preservation of "biologically good stock" has been incidental. Alcohol has injured the weaker germ plasm and has probably eliminated some of the less desirable germ cells. In the light of his researches, Stockard regards it as improbable that human beings have injured or eliminated their normal resistant germ cells with alcohol. Those nations of men, he concludes, that have used the strongest alcoholic beverages through many generations have now, from a standpoint of performance and modern accomplishments, outstripped the other nations with less alcoholism in their history. Such extreme generalizations in fields where many agencies of man and nature may cooperate or conflict in the course of the centuries can scarcely be claimed to abide within the range of exact science or even fully warranted hypothesis. Yet they are perhaps little less dependable than the commonly quoted "experience" of life insurance companies, which Pearl [2] has of late criticized adversely.

1. Stockard, C. R.: Alcohol a Factor in Eliminating Racial Degeneracy, Am. J. M. Sc. **167**: 469 (April) 1924.

2. Pearl, Raymond: Am. J. Hyg. **2**, No. 4, 1922; Alcohol and the Duration of Life, Am. Mercury **1**: 213 (Feb.) 1924.

His own observations are based on a group of more than 2,000 persons from data collected at first hand "with due regard to the biological and statistical pitfalls along the way." The conclusion reached from an elaborate and critical mathematical, biologic and sociological analysis of this material is that while heavy drinking distinctly shortens life, moderate drinking, on the other hand, is associated with no different duration of life than is total abstention. Actually, the moderate drinkers show a superior average of duration of life as compared with the abstainers, amounting to 0.99 year in the case of males and 3.21 years in the case of females, both groups entering the experience at the age of 20. No stress, however, is to be laid on these small differences. When experts disagree, the ordinary reader will do well to preserve an open mind. As Pearl has said, propaganda of all sorts, in the very essence of its nature, may have no necessary relation to truth. Equally it is likely to be actively opposed to any truth that does not fit into and accord with the particular ends toward which it may at any given moment be working.

MEDICINE AND METEOROLOGY

Few, indeed, are the physicians who do not now and then advise a patient to make a change of climate. However difficult it might be to justify such a recommendation in every instance, or even in most cases, on the basis of precise physiologic knowledge or strictly scientific therapeutic consideration, the benefits that repeatedly accrue to persons thus ordered to a "change of scene" are often too indisputably real to be gainsaid. Change of climate may mean far more than transport to a place where altitude, regimen, temperature, moisture and other atmospheric conditions are different; it may mean removal from smoke and dust and other noxious agencies in the air; it may bring about new associations and furnish a new personal environment, whereby psychologic influences rather than climatic factors are brought into play in connection with the sick. Such personal features doubtless account for many benefits; they cannot encompass all the good that is often attributable to a new environment. Climatology, from the human standpoint, has not yet reached the dignity of an exact science. It still banks on combinations of tradition, unverified beliefs and empiric deductions. For the north temperate zone it has been alleged more than once that limitations imposed by weather cause many persons to lead unhygienic lives in winter, some individuals almost entering a state of hibernation. For some of these, spring brings a welcomed tonic change; others seek it by removing to a different locality. The meaning of sunshine in the form of direct insolation has become apparent in recent years in connection with various diseases. Tuberculosis and rickets, for example, can testify amply to the health-giving virtues of the direct rays of the sun. A recent writer has accordingly asserted that a study of the benefits obtained from a change of climate becomes more important each year as the systemic changes caused by different climates are better understood.[1]

Climate and the weather are indissolubly associated with each other. Applied meteorology, as it is represented in records of the weather, has assumed a large importance in the vocations and the avocations of many persons. Work and play are often necessarily adjusted to the forecasts of the "weather man." Despite the jibes that are often leveled at him, his prognostications are carefully watched each day by thousands. The detailed studies of climatology by the Weather Bureau furnish the basis for considering the possible advantageous adjustment of many enterprises, including the location of sanatoriums or the migration of the sick and convalescent. Hundreds of official reporting stations and, literally, thousands of cooperative stations are today furnishing the records on which the multifarious work of the U. S. Weather Bureau is built.

The fraternity of physicians will be interested to learn that the credit for taking the first official observations of the weather belongs to members of our profession—the Army Medical Department. Humphreys[2] records that an order, dated May 2, 1814, makes it a duty of hospital surgeons to keep a diary of the weather; and one such journal, specifically recognizing this order, and kept at Cambridge, Mass., is dated July, 1816. This order appears to have been heartily endorsed by the first Surgeon General of the Army, General Joseph Lovell, appointed in 1818. In urging the approval of the order that such diaries of the weather be kept, he says: "Every physician who makes a science of his profession or arrives at eminence in it will keep a journal of this nature, as the influence of weather and climate upon diseases, especially epidemics, is perfectly well known. From the circumstances of the soldier, their effects on diseases of the army are peculiarly interesting, as by proper management they may in a great measure be obviated. To this end every surgeon should be furnished with a good thermometer, and, in addition to a diary of the weather, should note everything relative to the topography of his station, the climate, complaints prevalent in the vicinity, etc., that may tend to discover the causes of diseases, to the promotion of health, and the improvement of medical science." Humphreys also reports that the first volume of the meteorological observations by the Army Medical Department, covering the years 1822-1825, inclusive, was published in 1826. One purpose of this publication was to stimulate the study of the question, then under discussion, whether there is any progressive change in the climate of any portion of the country, and, if there is, how it is related to settlement and cultivation, a problem that has not yet been solved in all its details.

1. Osborne, O. T.: The Principles of Therapeutics, Philadelphia, W. B. Saunders Company, 1921.
2. Humphreys, W. J.: Origin and Growth of the Weather Service of the United States, and Cincinnati's Part Therein, Sc. Month. 18: 372 (April) 1924.

The second volume of these observations covered the years 1826-1830. One of the most important climatic generalizations thus obtained, Humphreys states, was the fact that, other things being equal, near large bodies of water, whether ocean, gulf or lake, the climate is more equable than it is far inland.

Those who have read the protocols of the laborious observations made by the pioneer American physiologist William Beaumont on the gastric conditions in his classic patient, Alexis St. Martin, may recall the meticulous care with which he recorded meteorological details. All readily observable features of the prevailing weather were set down; for who knew, one hundred years ago, what effects weather might have on health? That there were such seemed beyond question; even today we often gage our feelings in terms of the atmospheric conditions. From one group of experiments Beaumont concluded that "the variations of the atmosphere produce effects on the temperature of the stomach, a dry atmosphere increasing and a humid one diminishing it." And at the end of a century of progress we can, as Humphreys remarks, still truthfully repeat the jingle:

What is it molds the life of man?
The weather.
What makes some black and others tan?
The weather.
What makes the Zulu live in trees,
And Congo natives dress in leaves,
While others go in furs and freeze?
The weather.

PHYSIOLOGIC EFFECTS OF AIR CONCUSSION

The mere mention of a "condition of shock" in persons is likely to awaken the recollection of a horde of hypotheses that have overrun pathology since the World War directed attention anew, and in a larger measure than ever before, to this manifestation. One cannot think of the familiar types of shock without reference to the most characteristic symptom of reduction in arterial pressure, along with the other signs. This is the constant finding, regardless of whether it may be due to vasomotor exhaustion, mental emotion and bodily pain, fat emboli, acidosis, suprarenal exhaustion, toxic products liberated from damaged tissues, damaged brain cells, or any other of the conditions that have been charged at one time or another with being causal agencies in the production of shock. When traumatism occurs there is always an immediate and tangible basis for theorizing about any persistent fall in blood pressure that may ensue. There are, however, instances of such a circulatory upset that seem to be independent of noticeable physical injury. During the war, men subjected to the concussion of large shells often developed a condition of "shock" that was unrelated to obvious traumatism, since no external or internal wounds were clinically demonstrable. While it is true, as Hooker has pointed out, that subsequent investigations developed the fact that many of these instances were cases of psychoses (shell shock), nevertheless there was left a considerable number, the symptomatology of which indicated some physical injury, without, however, any external manifestation. Aerial concussion may also occur in civilian life as the result of explosion, so that the problems of possible resulting primary shock have more than a war-time clinical interest.

The physical effects produced by the firing of large guns or by the detonation of high explosives are due to the expansion in gaseous form of the explosive substance. Hooker,[1] who had unusual opportunities to investigate the effects of exposure to the firing of large caliber guns at the Sandy Hook proving ground, states that, when a large gun is fired, one experiences two distinct sensations. The first sensation is due to the "ground shock," which travels more rapidly than the sound waves and which, at a sufficient distance, is felt an appreciable time before the sound is heard. This "ground shock" is not distressing even close to the gun; gun crews are subjected to it at frequent intervals with no ill effects, and concrete emplacements and similar structures are not injured. The "ground shock" may therefore be excluded as a causative factor in the condition under investigation. The second sensation is due to the sound.

Experiments conducted by Hooker on animals indicate that the atmospheric disturbances produced by the firing of large guns readily produce a condition of primary shock, essentially instantaneous in onset and exhibited by a sudden marked fall in arterial blood pressure. Coincident with the latter, the venous pressure is likewise lowered, indicating a loss of tone in the veins. This indication of an independent loss of venous tone is substantiated by the concomitant venous engorgement noted early in the condition of shock. There is no evidence that the functional capacity of the heart becomes affected, and the valves remain uninjured. The blood is not hemolyzed in concussion shock. The function capacity of the medullary centers—the vasomotor, cardiomotor and respiratory reflexes—apparently remains unimpaired. No evidences of hemorrhage in the nervous tissues have been found. The sole gross lesion in concussion shock is the pulmonary injury. This might cause internal hemorrhage or, as the result of tissue destruction, release a toxic substance into the blood stream. That the explanation of concussion shock is not related to either of these factors is clearly indicated, Hooker contends, by the failure to produce shock by the detonation of a high explosive which developed the most extreme pulmonary injury. If the hemorrhage or tissue destruction were the primary causative factor, the experiments with high explosives should have produced shock. This was not

1. Hooker, D. R.: Physiological Effects of Air Concussion, Am. J. Physiol. **67**: 219 (Jan.) 1924.

the case, and, furthermore, in animals exposed to gun blasts, there was no apparent parallelism between the degree of pulmonary injury and the depression of the arterial blood pressure. Thus the effects seem to be distinct from other forms of shock heretofore considered. Whether concussion of the brain with damage to its cells will suffice to explain the sudden and unusual circulatory manifestations of extreme exposure to gun firing must be determined by a future investigation.

Current Comment

BONE DISORDERS INDUCED BY WAR-TIME DIETARY CONDITIONS

The World War was responsible for many unanticipated clinical conditions. Aside from the usual surgical complications attributable to the familiar instruments of warfare, an entirely new field of pathologic importance and therapeutic significance was opened by the novel use of poisonous gases. The problems of infection were modified, on the one hand, by the effective control instituted over such a disease as typhoid, and, on the other, by the serious distribution of such maladies as trench fever and typhus. It was not in the armies or the war-stricken areas alone that such difficulties arose. Wherever life became more strenuous and existence more precarious because of enforced deprivations, unanticipated harm presently made itself apparent among civilian populations. The misfortunes to health ranged from the unmistakable effects of undernutrition and starvation to varied manifestations of disease that were referable to some special condition. War edema, xerophthalmia in children, and carotinemia may be cited as highly specific illustrations. One by one, new instances of the war-time maladies are being disclosed, serving in some cases to direct attention to heretofore unknown or little recognized pathologic possibilities. One of these appears to be a somewhat unique form of disease of the bones—the "Kriegsosteopathie" of the German writers [1]—that was discovered in Vienna and other parts of central Europe in the latter period of the war and in the immediately succeeding years. It is manifested by extensive softening of the bones and consequent distortions of the skeletal structures, particularly in the region of the thorax and pelvis. The pathogenesis of the disorder has not yet been elucidated. In its clinical manifestations it is said to resemble, in some ways, osteomalacia. Chemical studies made by Loll [2] at the physiologic institute of the University of Vienna on the bones of victims of the "osteopathic" disorder have disclosed, in severe cases, a relative increase of calcium along with a striking decrease of phosphorus, the magnesium content being unchanged in comparison with the normal. These details of inorganic composition are at variance with what has been found in either rickets or osteomalacia; for in these diseases the proportions of calcium and phosphorus remain unchanged although the quantity of salts in the bones may be greatly decreased. Such facts as have been collected are not sufficient to explain the etiology of the serious disorder that has been discovered; they serve, however, to give additional evidence of the seriousness of impairment of national nutrition for the welfare of the organism.

1. Schlesinger, H.: Wien. klin. Wchnschr., 1919, No. 10.
2. Loll, W.: Die quantitative Analyse der Knochenasche bei Kriegsosteopathie, Biochem. Ztschr. **135**: 493, 1923.

BEQUESTS FOR THE HINDRANCE OF MEDICAL RESEARCH

A living antivivisectionist may by some rare chance be converted to reason; a dead antivivisectionist never can be. A dead antivivisectionist may be, therefore, a greater menace to society than one who is alive, for, through the power of a legacy, efforts may continue for many years to obstruct medical progress. How the dead thus lay their blight on efforts to relieve suffering and to cure disease is shown by the annual report of the New England Antivivisection Society for 1923-1924. Two bequests received during 1924 amounted to $9,539.26. Twenty-one bequests received since 1898 amounted to $78,046.01. It is and will continue to be the duty of the trustees of these funds to find methods for expending at least the income in conformity with the wishes expressed by the departed donors prior to their departures, no matter what their present views might be were they now on earth. The hands of the dead reach forth to draw the living into the grave.

THE CONTROL OF EPIDEMICS

The study of epidemiology has for the most part been prosecuted by statistical methods. The facts of the existence of individual diseases, the morbidity and mortality that attend them, the degree and extent of their distribution, and their possible correlation with other existing phenomena have been considered on the basis of data furnished by the actual circumstances of life. Although the application of experimental methods to the investigation of the etiology, transmission, pathology, therapy and prevention of individual maladies has long been fruitful, a comparable technic has as yet scarcely found employment in the field of epidemiology. Notable exception to this statement is found in the studies by Topley in England and by the Rockefeller Institute for Medical Research [1] in this country on an epidemic disease, mouse typhoid, experimentally induced in laboratory animals. In reviewing the results of these elaborate investigations, which have now extended over a number of years, Webster [2] has reminded us that the equilibrium of an infectious disease in a given community is determined essentially by the factors of microbic distribution, microbic virulence, and host susceptibility. To avert or modify epidemic occurrence, one or more of these factors must become the subject of alteration. The ability of bacteria to multiply in the tissues of a host, thus leading to disease or death—in other words, microbic virulence—appears

1. Flexner, Simon: Proc. Nat. Acad. Sc. **7**: 319, 1921; J. Exper. Med. **36**: 9 (July) 1922.
2. Webster, L. T.: The Application of Experimental Methods to Epidemiology, Am. J. Hyg. **4**: 34 (March) 1924.

to be a relatively fixed quality; at any rate, it cannot readily be altered in nature, however easily changes may be induced in the laboratory cultures. In the New York studies it was found, for example, that several paratyphoid-enteritidis strains, isolated from man and animals and related antigenically, differed markedly in pathogenicity; but the inherent virulence of each strain remained constant. Hence, individual strain virulence among such ubiquitous bacilli may be regarded as a relatively fixed quality. Racial immunities develop only with time. This factor can at best be modified very slowly, if at all. Consequently, the control of epidemics must base its greatest hope of success for the present on influencing microbic distribution. Of course, individual susceptibilities may be influenced by general environment conditions, such as hygiene and diet; but, in a larger way, the hope of marked progress lies in the prevention of the distribution of the harmful species of micro-organisms.

THE TRANSMISSION OF MEASLES THROUGH TRANSFUSION OF BLOOD

Though one of the most prevalent of epidemic diseases, measles has managed to leave many stumbling blocks on the pathway of the study of its causation. The virus has been sought in the blood, the throat, the nasal secretions and the lacrimal secretions of patients in various stages of the disease. Micro-organisms have been cultivated, from which symptoms have been obtained in experimental animals. Sellards' attempts to transmit the disease to apparently susceptible human volunteers, however, were unsuccessful.[1] Sometimes the evidence that man has long endeavored to secure through premeditated experiment is furnished by nature's experiments or by unprepared chance. This seems to have been the case at the Minneapolis General Hospital, where for purposes of life-saving transfusion, in two instances, the blood from a mother subsequently discovered to have measles was injected into the circulation of her child and produced characteristic measles.[2] Contact infection was excluded. The virus was found to be present in the blood at least two days before the appearance of the rash. Owing to the definiteness of the time of inoculation, the incubation period could be accurately established at thirteen and fourteen days. Since measles may be transmitted through transfusion of blood, Bauguess regards it as advisable to take a careful history of those who are to be blood donors for young patients, and to look for Koplik spots.

EMPIRICISM IN MOSQUITO CONTROL

Three stages have been described in the history of medicine—those of dogma, of empiricism, and of modern science. Lee[3] has reminded us that empiricism characterized the Renaissance and the centuries immediately following, while modern science is a matter of decades. However sharply differentiated are these stages, something of science characterized the earlier ones, while something of both dogma and empiricism, though forever dethroned, still persists. It would be fatuous, Lee adds, to disparage the inheritance with which medicine entered on its present stage. An interesting instance of the advantageous operation of empiricism in the domain of disease prevention has just been disclosed by Molloy[4] in connection with the recently promoted extensive use of fish as antimosquito agencies. It appears that the indigenous tribes of Central American Indians have for generations used fish to a certain extent in water containers. The animals were known to keep the water clean by eating the mosquito larvae, although the natives did not suspect that insect pests hatch from the latter. The practice of the villagers was sanitary, although they could not have known the reason. The freedom of the Barbados from malaria is attributed to the widespread prevalence of tiny larva-eating fish in the swamps, ponds and streams of the island. Fish have long been kept by the Barbados natives in their rain-water barrels containing drinking water, the custom having been carried on from generation to generation. It is probable that the Chinese began the use of goldfish in drinking-water containers. Fish are now depended on in many parts of the world, notably in Central America, as antimosquito agencies. Strangely enough, it has become necessary in some places to protect the fish themselves against their enemies[5] in order to conserve the supply of the mosquitoes' destroyers.

1. Sellards, A. W.: Bull. Johns Hopkins Hosp. **30**: 257 (Sept.) 1919.
2. Bauguess, Harry: Measles Transmitted by Blood Transfusion, Am. J. Dis. Child. **27**: 256 (March) 1924.
3. Lee, F. S.: Scientific Features of Modern Medicine, New York, 1911.
4. Molloy, D. M.: Some Personal Experiences with Fish as Antimosquito Agencies in the Tropics, Am. J. Trop. Dis. **4**: 175 (March) 1924.
5. Monroe, W. M.: An Efficient Turtle Trap for Protection of Gambusia in Hatcheries, Ponds, etc., Am. J. Trop. Dis. **4**: 195 (March) 1924.

Association News

CONFERENCE ON LEGISLATIVE PROGRAM AND PROCEDURE

State Legislative Committees to Meet with American Medical Association Bureau

The Bureau of Legal Medicine and Legislation of the American Medical Association is arranging to invite the chairmen of the state legislative committees to attend a conference in Chicago, Wednesday, June 11, in the Association Building, to consider plans for increasing the legislative effectiveness of the American Medical Association and of its constituent associations. This preliminary announcement is made so that those interested may hold open the noon hour of Wednesday, June 11, for this purpose.

THE CHICAGO SESSION

American Medical Golfing Association

The tenth annual tournament and dinner of the American Medical Golfing Association will be held at the Olympia Field's County Club, Chicago, June 9. After thirty-six holes of golf, there will be a dinner for the members of the association, and prizes will be awarded. Dr. James Eaves, San Francisco, is president, Dr. Fred Bailey, St. Louis, secretary-treasurer, and John Walter, 1507 Hinman Avenue, Evanston, Ill., is business secretary of the American Medical Golfing Association.

Fort Riley Reunion

The Fort Riley Reunion Association will hold its annual dinner at the University Club, Chicago, Wednesday evening, June 11. Announcements have been sent to all physicians whose names appear on the rolls of the thirty-four com-

panies of the M. O. T. C. from May 1, 1917, to July 15, 1918. Any physician who was at Fort Riley during the war as an instructor, student officer or member of the base hospital staff is cordially invited to attend. Dinner will be served at 7:30. Tickets are $3. This is the fourth reunion of the Fort Riley M. O. T. C. and is expected to be the biggest and the best. At least 400 Riley men should be present. Colonel Bispham will be there.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

John Andrew Clinical Society.—At the thirteenth annual clinic of the society at Tuskegee Institute, March 31-April 5, Dr. William H. Brummitt, Talladega, was elected president; Dr. Charles Waymond Reeves, Atlanta, Ga., vice president, and Dr. John A. Kenney, Tuskegee Institute, secretary-treasurer.

CALIFORNIA

"Research Specialist" Arrested.—According to reports, "Dr." R. H. V. Albrextondare, "research specialist" with offices in Los Angeles, was arrested by the state board of medical examiners, April 10, on a charge of practicing medicine without a license. Albrextondare was arrested in 1918 in Hollywood on a charge of administering "love potions."

COLORADO

Chiropractic License Revoked.—It is reported that Leo L. Spears, Denver, chiropractor, was deprived of his license to practice in Colorado by the state board of medical examiners, April 16. This action followed a long fought trial of Spears on charges of "dishonorable, immoral and unprofessional" practice filed against him. The board found that he "unjustly discredited the officers of the Fitzsimmons General Hospital merely for the purpose of increasing his practice and income as a chiropractor."

CONNECTICUT

Personal.—Dr. Walter H. Kiernan, Sandy Hook, has been appointed medical examiner for Brookfield to succeed Dr. Charles A. Ryder, who resigned, recently.——Dr. Harry H. Moore, Stafford Springs, and Dr. Elliott H. Metcalf, Rockville, were elected president and secretary-treasurer, respectively, at the one hundred and thirty-second annual meeting of the Tolland County Medical Association.

DISTRICT OF COLUMBIA

Personal.—Surg. Paul M. Stewart, U. S. Public Health Service, Washington, has been relieved from duty there and assigned to duty in the American consulate, Genoa, Italy.

American Chemical Society.—At the sixty-seventh annual congress of the society in Washington, April 21-25, Prof. R. A. Millikan, California Institute of Technology, winner of the Nobel prize in physics for 1923, discussed "The Atom as Seen by the Physicist." The society and its guests were received at the White House, April 24. Professor Baekeland, New York, presided.

The Wapiya.—The Wapiya, which comprises the medical members of the University Club of Washington, recently issued the first number of a bulletin entitled the *Tom Tom*. This society which was organized in September, 1921, held its third annual "powwow," April 17; Everett M. Ellison, the itanca, presided. John J. Tigert, U. S. commissioner of education, gave an address. Dr. Harvey W. Wiley addressed the society on "Vitamins and Calories."

FLORIDA

Fake Diplomas.—Dr. Ralph N. Greene announces that the state board of medical examiners will endeavor to locate every illegal practitioner in the state and take action against them. It has been stated that there are fifty physicians practicing on fake diplomas in the state. The public is asked to aid in the campaign. Dr. Leonidas M. Anderson, Lake City, has been appointed a member of the state board of medical examiners to succeed Dr. James M. Jackson, Miami.

GEORGIA

Personal.—Dr. J. Allen Johnston has resigned as health commissioner of Decatur County.

Child Health Demonstration.—Augusta has been included in the survey to be made by the American Child Health Association to raise child health standards throughout the country.

ILLINOIS

Personal.—Dr. Ray Mercer, Quincy, has been appointed to the medical detachment of the One Hundred and Thirtieth Infantry with the rank of major.

Chicago

Midwife Fined.—It is reported that Mrs. Mary Matusek, a midwife, was fined $25, April 15, by Judge Finnegan for using "moonshine" in a new-born infant's eyes instead of nitrate of silver.

Baby Week in Chicago.—The week of May 4-10 will be celebrated as Baby Week under the auspices of the Infant Welfare Society. Harry L. Wells is the newly elected director of the society. The president reports that the death rate of infants in Chicago has been reduced more than 66 per cent. in twelve years.

Transfer of Clinical Division of Rush Medical College Authorized.—Transfer of the clinical department of Rush Medical College to the University of Chicago was recently authorized by the circuit court and was affirmed by the Illinois Supreme Court, April 14. Thus the clinical division of Rush Medical College which heretofore has been only affiliated, now becomes an integral part of the University of Chicago.

Personal.—Dr. Phillip A. Scott, recently connected with St. Luke's Hospital, has been appointed director of the department of pathology at the Tacoma (Wash.) General Hospital.——Col. Patrick J. H. Farrell has received the silver star from the War Department for gallantry in action against Spanish forces in attending wounded under fire at Manila, Philippine Islands, Aug. 1, 1898, while serving with the First California Volunteer Infantry.——Dr. George M. Curtis, of the University of Chicago, addressed the Chicago Society of Internal Medicine, April 28, on "The Production of Experimental Diabetes Insipidus."——Dr. John C. Geiger has been appointed assistant city health commissioner and epidemiologist. Dr. Geiger has been epidemiologist for the U. S. Public Health Service and assistant professor of epidemiology at the University of Chicago.——Dr. C. G. Grulee, Chicago, will address the Akron (Ohio) Medical Society, May 7, on "Some Points with Regard to the Neonatal Period."——Dr. Stephen Walter Ranson, professor of anatomy at Northwestern University Medical School, has been appointed director of the department of histology at the Washington University Medical School, St. Louis.——Dr. Leon Michaelis, professor of physiologic chemistry at the University of Berlin, delivered a series of three lectures on "The Electrifying Effects of Ions, an Essay of a General Theory, Especially for Application to Biology," at the Kent Theater, April 30, May 1 and 2. The lectures were given under the joint auspices of the University of Chicago and the Institute of Medicine.

INDIANA

Licenses Revoked.—The licenses of three Indianapolis physicians, convicted of violating the Harrison Narcotic Law, were revoked by the state board of medical registration and examination, April 17. The men were James P. Allen, colored; James O. Puryear, colored, and William B. Hartsock.

KENTUCKY

Physician and Druggist Sentenced.—Dr. Fred W. Ray, Independence, and Julius C. Hughey, druggist of Covington, were recently sentenced to serve one year and a day in the Atlanta federal penitentiary, when they pleaded guilty to violation of the Harrison Narcotic Law, according to reports.

LOUISIANA

Louisiana State Medical Society.—At the annual meeting of the state medical society in Opelousas, April 21-24, the following officers were elected for 1924-1925: president, Dr.

Charles V. Unsworth, New Orleans; first vice president, Dr. E. M. Ellis, Crowley; second vice president, Dr. Carson R. Reed, Natchitoches; third vice president, Dr. Roy B. Harrison, New Orleans, and secretary-treasurer (reelected), Dr. Paul T. Talbot, New Orleans. The next meeting will be held in New Orleans, 1925.

Dairy Laws Enforced.—Notice was served by the Jones County health officer that the law governing dairies would be strictly enforced after May 1. The law states: "No person shall engage in the production of milk for sale in any town or city, nor shall any person engage in the handling of milk for shipment into any town or city, or sell for public use any milk or by-products, until he has obtained a permit or license from the county health officer."

MARYLAND

Herter Lecture.—Prof. G. Elliott Smith, professor of anatomy, University College, London, spoke on "The Acquisition of Stereoscopic Vision and the Evolution of the Human Brain" at Johns Hopkins Hospital, Baltimore, April 22. The lecture was given under the auspices of the Herter Foundation Fund.

Personal.—Dr. Robert W. Johnson gave a reception, April 17, to the Fellows of the American Surgical Association, assembled in Baltimore for the annual convention.——Dr. George Walker, Dr. William B. Perry and Dr. Emil Novak have been appointed to the board of supervisors of city charities by the mayor and city council.——Dr. Arthur G. Barrett has been reelected president of the West Baltimore Medical Association. Other officers elected at the annual meeting, April 16, were Dr. A. Clarence Smink and Dr. Herbert C. Blake, vice presidents; Dr. Arthur C. Tiemeyer, corresponding secretary; Dr. Gustav Goldman, recording secretary, and Dr. Leonard A. Richardson, treasurer.

Annual Meeting of the Faculty.—The one hundred and twenty-sixth annual meeting of the Medical and Chirurgical Faculty of Maryland was held, April 22-24, at the Faculty Building, Baltimore. Dr. Philip Briscoe, the president of the faculty, gave an address on "Reminiscences of the Faculty," and Dr. Dean Lewis, professor of surgery, Rush Medical College, Chicago, addressed the members on "Infections From a Surgical Viewpoint." Officers elected for 1924-1925 are as follows: president, Dr. Llewellys F. Barker, Baltimore; vice presidents, Dr. Josiah S. Bowen, Baltimore, Dr. Thomas B. Johnson, Frederick, and Dr. James McT. Dick, Salisbury; secretary, Dr. Joseph Albert Chatard, Baltimore, and treasurer, Dr. Charles E. Brack, Jr., Baltimore (both reelected); members of the state board of medical examiners, Dr. John T. O'Mara, Baltimore, Dr. Harry L. Homer, Baltimore, and Dr. John E. Leggé, Cumberland.

MASSACHUSETTS

Harvard Exchange Professor.—Sir D'Arcy Power, consulting surgeon, St. Bartholomew's Hospital, London, recently arrived in the United States to take the place of exchange professor at the Medical School of Harvard University, Boston. On April 21, he addressed the Boston Medical History Club. Dr. Power is vice president of the Royal College of Surgeons.

Drive Against Nostrums.—The state department of public health has started a drive against quack medicines purporting to cure venereal disease. An investigation disclosed that at least fifty different preparations, "cure-alls," are being sold. Druggists who have been requested voluntarily to discontinue selling these preparations in practically every case have complied with the request. The campaign is showing remarkable success.

MICHIGAN

Vaccination Ordered.—Following the discovery of seven cases of smallpox in Bay City all children in the public schools were ordered vaccinated by the state health commissioner, April 7.

University News.—The new physics building at the University of Michigan Medical School, Ann Arbor, is completed. This with the medical building, which is nearing completion, and the law and literary building on the east side form a triangle. The new hospital on the general campus is in process of construction.

Chiropractor Imprisoned.—E. M. Clark, a chiropractor of Hart, was found guilty of practicing medicine illegally, in the circuit court, April 14, and sentenced to four months imprisonment and to pay a fine of $100. He had been released on probation last January. John R. Judd, who went to Hart to succeed Clark, is now under arrest charged with violation of the law, according to reports.

MISSISSIPPI

State Board of Health Election.—At a meeting in Jackson, April 15, Dr. Walter W. Crawford, Hattiesburg, was elected president, and Dr. Waller S. Leathers, was reelected secretary and executive officer of the board. Other members are Drs. James P. Wall, Jackson; James J. Haralson, Forest; Leonidas B. Austin, Rosedale; James W. Lipscomb, Columbus; Jones S. Hooper, Winona; James M. Dampeer, Crystal Springs; Willie H. Watson, Brandon; Evan M. Gavin, Ovett; Ira B. Seale, Holly Springs; Andrew J. Brown, Duncan; Walter W. Crawford, Hattiesburg, and Samuel E. Eason, New Albany.

MISSOURI

Child Health Conference.—Dr. James Ross Clemens, professor of children's diseases, St. Louis University School of Medicine, was present the entire week of the child health conference held in Columbia, April 28-May 3. Members of the Boone County Medical Society were on duty in shifts of four each morning.

Social Hygiene Work.—A social hygiene exhibit was conducted in St. Louis, April 14-20, under the auspices of the state board of health, the public welfare department and the social hygiene association. Dr. R. L. Russell, director, bureau of venereal disease, was in charge. Dr. Martin F. Engman, president of the state social hygiene association, and the director of public welfare gave addresses. A fourteen reel motion picture "The Gift of Life" was shown twice a day during the exhibit.

NEBRASKA

Hospital Additions.—Construction work has recently been started on the new addition for the Pawnee County Hospital, Pawnee City.——A hospital and infirmary will be erected at the Nebraska Masonic Home, Plattsmouth, at a cost of $200,000.

NEW YORK

Fire Equipment for State Hospitals.—A bill has been signed by Governor Smith appropriating $1,000,000 to provide for the elimination of the fire hazard in the several state hospitals for the insane.

State Journal Now Monthly.—With the April 18, issue, the *New York State Journal of Medicine* discontinued its weekly service and returned to its monthly schedule. The weekly service was conducted only during the session of the legislature.

Ear Tests of Public School Pupils.—A new section has been added to the Education Law, Section 577a, which requires the commissioner of education to appoint a specialist to assist the state medical inspector in making eye and ear tests in public school pupils.

Twenty . Physicians Accused of Bootlegging.—Evidence against twenty Buffalo physicians for alleged conspiracy to violate the liquor laws was submitted to the federal grand jury, April 24. Books of liquor scrips have been sold to druggists, it is alleged, either directly or through middlemen.

New Prison to Be a Hospital.—The new Wingdale Prison at Wingdale, erected at a cost of $1,500,000 and which was abandoned as a penal institution in December, 1923, is being converted into the New Harlem Valley Hospital for the Insane. Dr. John R. Ross, medical inspector of the state hospital commission, has been appointed superintendent.

Carrol-Lattin Bill Fails to Pass.—The Carrol-Lattin bill, aimed to amend the medical practice act, failed to pass the legislature, although sponsored by the Medical Society of the State of New York and the state board of education. The clause requiring regularly licensed physicians to register annually for five years was strongly opposed by certain groups of physicians.

Society News.—The Albany County and the South Side Clinical (Suffolk County) Medical societies each held memorial meetings this month in honor of departed members.——In the evening of April 22, Dr. William A. Howe, chief state medical inspector of schools, arranged a dinner for school medical inspectors at Rochester. Invitations were

sent out to about 1,500 school medical inspectors throughout the state exclusive of New York, Rochester and Buffalo.

State Society Elections.—At the one hundred and eighteenth annual meeting of the Medical Society of the State of New York in Rochester, April 22-23, the following officers were elected for the ensuing year: president, Dr. Owen E. Jones, Rochester; vice presidents, Drs. George A. Leitner, Piedmont, and Luzerne Coville, Ithaca, and secretary, Dr. Edward Livingston Hunt, New York (reelected). In an address, August Downing, assistant commissioner of education, stated that he would resign, January 1, unless the members of the society stand united for a new law that will rid the state of quacks. The next meeting will be held at Syracuse.—— At the eighteenth annual meeting of the Women's Medical Society of New York in Rochester, April 21, Dr. Julia K. Qua, Amsterdam, was elected president; Drs. Sarah G. Pierson, Rochester, and Ina Vanderhoof Burt, Fredonia, and Lilian K. P. Farrar, New York, vice presidents; Dr. Anna Harvey Voorhis, Yonkers, secretary, and Dr. Harriet F. Coffin, New York, treasurer.

New York City

Hospital News.—The New York Hospital has added to its outpatient clinic a department for nervous and mental diseases. This will be open on Tuesday and Thursday afternoons.

Hospital-Hotel Cornerstone Laid.—The cornerstone of the Hudson Towers Hospital Hotel, on Seventy-Second Street, was laid, April 27. Motion pictures of operations, a collection of drugs, a list of diseases now considered incurable and stained specimens of all disease-producing bacteria known, were placed in the cornerstone. There will be a dining room where persons who are not patients may have meals according to prescription. Any physician may treat his own patients in the building. Patients' rooms are to be constructed so that they may be made into suites for friends or relatives desiring to stay in the hospital.

Periodic Health Examinations.—Representatives of the municipality, the church, civic organizations, industry, commerce and the medical profession joined in a mass meeting, April 15, to show the urgent need of periodic health examinations. The meeting was held under the auspices of the Brooklyn Health Examination Committee and the Kings County Medical Society. The subject was discussed by Health Commissioner Dr. Frank J. Monaghan; Dr. Thomas J. Riley, general secretary of the Bureau of Charities; Frederick B. Pratt, chairman of the Brooklyn Tuberculosis Committee; Dr. Glantworth R. Butler, chairman of the medical committee of the Brooklyn Health Examination Committee; Dr. Charles A. Gordon, president of the Kings County Medical Society, and others. In order to encourage an annual health examination for every citizen of Brooklyn, the medical committee of the public health examination committee has issued a standard health blank for use at these examinations. Worthy citizens who cannot pay a physician for the examination will be taken care of by the committee under the auspices of the Brooklyn Bureau of Charities. These forms are to be printed by May 12 and distributed to every resident of the borough.

Personal.—Dr. Herman Goodman spoke on "Master Dermatologists, Based on Diseases Named After Them," before the section on historical medicine of the New York Academy of Medicine, April 24.——Dr. Erich Leschke of the University of Berlin spoke on "Relation of the Vegetative Nervous System to the Endocrines" at the Beth Israel Hospital, April 8.——Dr. James W. Smith, assistant professor of ophthalmology, New York Post-Graduate Medical School and Hospital, has been appointed assistant attending ophthalmologist to the New York City Hospital. —— Governor Smith has appointed Dr. Frederick Fuller Russell of Brooklyn a member of the public health council of the state to fill the vacancy caused by the death of Dr. Theophil Mitchell Prudden.——Dr. Joseph Eastman Sheehan has sailed for Europe to lecture in London and Paris on plastic surgery. He will appear before the Société française de laryngologie.—— Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, has been reappointed by Governor Smith to be a member of the Public Health Council for a term of six years.——Prof. Arthur Biedl, of Prague University, gave a lecture and clinical demonstration on pluriglandular disturbances at the Unity Hospital, Brooklyn, March 24.—— Dr. Edward C. Titus has been appointed consultant in physiotherapy to the Reconstruction Hospital.——Dr. Chester F. S. Whitney has been awarded the Vermeil Medal of Honor by the French government.

NORTH CAROLINA

Medical Extension Courses.—A series of twelve lectures and clinics, one each week, on the subject of pediatrics will be given in Rutherfordton, Shelby, Gastonia, Charlotte, Concord and Lincolnton, by Dr. Jean V. Cooke, associate professor of pediatrics at Washington University Medical School, St. Louis, for the extension division of the University of North Carolina, Chapel Hill, during the summer graduate medical courses, which will begin in twelve cities, June 1. The others will be given in Durham, Sanford, Carthage, Hamlet, Lumberton and Fayetteville, by Dr. Phillip C. Jeans, senior associate professor of pediatrics, of Washington University Clinic.

OHIO

National Safety Council.—A joint safety conference will be held in Cleveland, May 16, under the auspices of the engineering section of the council and the state engineering societies. Dr. Arthur G. Cranch, National Carbon Company, Cleveland, will speak on "Medical Requirements of the Workmen's Compensation Law."

Personal.—Dr. James T. Hanson, Gallipolis, gave a dinner to fellow physicians, March 28, to celebrate his seventy-third birthday and to announce his retirement from practice.—— Dr. Floyd R. Stamp has resigned as health commissioner of Alliance.——Dr. Cecil E. Boord has been appointed professor of chemistry and Drs. John D. Dunham and Jacob J. Coons, professors of medicine at the University of Ohio College of Medicine, Columbus.

PENNSYLVANIA

Professor Aschoff to Lecture.—A series of ten lectures will be given by Prof. Ludwig Aschoff, Freiburg, Germany, at the Mercy Hospital, Pittsburgh, from May 5 to 17. Physicians are invited to attend.

Society News.—The Dauphin County Medical Society elected officers for the year 1924 as follows: president, Dr. G. L. Laverty; vice presidents, Dr. N. B. Shepler and Dr. A. J. Griest; secretary-treasurer, Dr. W. S. Russell, and editor, Dr. J. F. Reed.

Personal.—Dr. Agnew F. Frankhauser has been appointed secretary of the board of health of Reading.——Dr. Milton L. McCandless was elected president of the Rochester Board of Health, April 8.——Dr. Charles H. Gano, Pittsburgh, has been appointed medical director of Allegheny County.

Philadelphia

Hospital News.—Ground was broken, April 21, for the annex of the Samaritan Hospital, which will be erected at Broad and Ontario streets at a cost of $400,000.

Society Celebrates Anniversary.—The seventy-fifth anniversary of the founding of the Philadelphia County Medical Society will be celebrated with a banquet at the Bellevue-Stratford, May 7.

Dr. de Schweinitz Resigns.—Dr. George E. de Schweinitz has resigned as professor of ophthalmology in the University of Pennsylvania Medical School. His assistant, Dr. Edward A. Shumway, has also resigned.

Personal.—Dr. Valentine W. M. Wright, formerly resident physician at the Philadelphia General Hospital, has been awarded the cross of the chevalier of the Order of George I, by King George of Greece for his work among the Greek refugees in Turkey.——Dr. William P. Graves, professor of gynecology, Harvard University, addressed the Obstetrical Society of Philadelphia in the College of Physicians, May 1, on "Contraindications to the Use of Radium in Gynecology."

Organization for Relief of Heart Disease.—At the third annual meeting of the Philadelphia Association for the Prevention and Relief of Heart Disease, April 16, plans were considered for a national organization for the prevention and relief of heart disease and for a state sanatorium for persons affected with heart trouble. Dr. Lewellys F. Barker, emeritus professor of medicine, Johns Hopkins University, Baltimore, was the principal speaker. There are twenty-one active heart clinics and ten diagnostic clinics in the state affiliated with the Philadelphia association. All the officers were reelected as follows: president, Dr. Joseph Sailer; vice president, Dr. George W. Norris, and secretary, Dr. William D. Stroud.

SOUTH CAROLINA

State Medical Meeting.—At the seventy-sixth annual meeting of the South Carolina Medical Association in Orangeburg, April 15-17, Dr. William A. Pusey, Chicago, President-Elect

of the American Medical Association, gave an address on the "Social and Economic Status of the Physician." This was the first visit of a president of the national association since Dr. James Moultrie, Charleston, was president in 1852. The following officers were elected: president, Dr. Drayton M. Crosson, Leesville; vice presidents, Drs. George H. Bunch, Columbia, L. C. Shecut, Orangeburg, and Charles J. Lemmon, Sumter, and secretary-treasurer, Dr. Edgar A. Hines, Seneca (reelected). The next annual meeting will be held in Spartanburg in 1925.

TENNESSEE

Medical Society Granted New Charter.—The Chattanooga and Hamilton County Medical Society was granted a new charter by the state medical association at its annual meeting, recently. The society was disbanded following the split caused by the trial of Dr. Woodruff A. Banks.

State Medical Election.—At the annual meeting of the Tennessee State Medical Association in Knoxville, recently, the following officers were elected for the ensuing year: president, Dr. Frank D. Smythe, Memphis; vice presidents, Drs. Julian B. Blue, Memphis, Moses A. Beasley, Hampshire, and Jesse C. Hill, Bearden; treasurer, Dr. John O. Manier, Nashville, and secretary-editor, Dr. Joseph F. H. Gallagher, Nashville.

TEXAS

Physician Fined.—Dr. Jasper H. Hill, Houston, was fined $500 in the federal court, April 19, when he pleaded guilty to violation of the Harrison Narcotic Law, according to reports.

Society News.—The Midwest Texas District Medical Society was recently organized at Abilene and at a later meeting in Sweetwater, Dr. Lamartine O. Dudgeon, Sweetwater, was elected president; J. E. Taylor, Abilene, vice president, and Dr. Thomas Wade Hedrick, Abilene, secretary-treasurer.——At the recent meeting of the Panhandle Medical Society, Dr. Charles F. Wilson, Memphis, was elected president.——The eighth annual meeting of the Texas Surgical Society was held in Forth Worth, April 13-14. Dr. Charles S. Venable, San Antonio, now serves as president and Dr. Harold L. D. Kirkham, Houston, as secretary.

WASHINGTON

Society News.—Dr. William Russel MacAusland, of the Carney Hospital, Boston, gave an illustrated lecture before the King County Medical Society, April 28, on "Orthoplasties."

Hospital News.—Reconstruction work on the Northern Pacific Hospital, Tacoma, has been completed at a cost of $120,000.——The new General Hospital at Everett was formally opened to the public last month. It was erected at a cost of $300,000.——A new general hospital will be erected in the near future at Longview at a cost of $100,000 by the Longview Hospital Association.

Health Board Appointments.—The recently appointed commissioner of health of Seattle, Dr. George N. McLoughlin, has made the following appointments: chief consulting surgeon, Dr. George M. Horton; general surgery, Drs. Sherald F. Wiltsie, Roscoe E. Mosiman and Walter C. Lippincott; neurologic surgery, Drs. Harry Eugene Allen, Thomas E. Douglas and Howard J. Knott; general medicine, Drs. James E. Hunter and Cassius H. Hofrichter; skin diseases, Dr. Leonard H. Jacobson; radiography, Dr. Harold B. Thompson, and proctology, Dr. Arthur C. Crookall.

WISCONSIN

Society News.—At a joint meeting of the Milwaukee Academy of Medicine and the Oto-Ophthalmic Society, in Milwaukee, April 22, Dr. John R. Pennington, University of Illinois, Chicago, and Dr. Walter I. Lillie, Rochester, Minn., gave addresses on "Simplified Methods for the Treatment of Rectal and Anal Diseases," and "Frequency of Ocular Phenomena in Acromegaly," respectively.

CANADA

Smallpox News.—Ottawa has seven cases of smallpox, six of which have been traced to Windsor, where the epidemic started. The six cases are all in one family.

Personal.—Dr. Forbes Godfrey, member of the Ontario Provincial Legislature for West York, was recently sworn in as minister of health. He will continue to be minister of labor also.——Citizens of Annapolis Royal, Nova Scotia, presented Dr. Augustus Robinson, aged 88, with a purse of gold, recently in celebration of his sixty-seventh year of practice in that township. Dr. Robinson is a graduate of the University of Pennsylvania Medical School, Philadelphia, in 1857. He has been mayor for seven terms and is still in active practice.——Dr. Albert Brosseau has entered on his duties as superintendent of the Saint Michael Archangel Hospital, Quebec.——Dr. Arthur Rousseau was recently the guest of honor at a banquet given by the last year students of the University of Montreal, Quebec.——Dr. Clark E. Hetherington, Columbia University, New York City, and Dr. Victor V. Anderson, of the National Committee of Mental Hygiene, New York City, recently gave addresses at the University of Toronto, Toronto, Ont.——Dr. Earl M. Watson, London, Ont., who recently returned from England, has been appointed lecturer on pathologic chemistry at Western University, London.

GENERAL

China Establishes Leper Colony.—The Chinese government has arranged to convert the island of Tai Kam, off the shore of Canton, into a leprosarium which will accommodate 2,000 lepers. The American Mission to Lepers has undertaken the construction of the first sixteen buildings at a cost of $66,000. A band of 200 pirates inhabits one end of the island.

American Association of Anatomists.—At the annual meeting of the American Association of Anatomists in Buffalo, April 16-19, Dr. Florence R. Sabin, professor of histology, Johns Hopkins University, Baltimore, was elected president to succeed Dr. Clarence M. Jackson, Washington, D. C., editor of the *American Journal of Anatomy*. Dr. Arthur W. Meyer, professor of anatomy, Stanford University School of Medicine, San Francisco, was elected vice president, and Dr. Lewis H. Weed, dean of Johns Hopkins University, Baltimore, secretary-treasurer.

Society News.—The Southwestern Division of the American Association for the Advancement of Science will hold its fifth annual meeting in El Paso, Texas, May 5-7. Dr. Elliott C. Prentiss, El Paso, is chairman of the executive committee.——The twenty-ninth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Montreal, Canada, September 16-20, under the presidency of Dr. Walter B. Lancaster, Boston. Lieut.-Col. Henry Kirkpatrick of London and India, the guest of honor, will give an address on "Cataract." A golf tournament will be held, September 15, and those who expect to participate should send their names to Dr. Frank Brawley, 30 North Michigan Boulevard, Chicago.——At the fifty-first annual meeting of the Tri-State Medical Association (Michigan, Ohio and Indiana) in South Bend, Ind., April 9-11, Dr. Chester W. Waggoner, Toledo, Ohio, was elected president; Dr. Joseph H. Andries, Detroit, vice president, and Dr. Charles W. Haywood, Elkhart, Ind., secretary.——The second annual meeting of the American Child Health Association will be held in Kansas City, Mo., October 15-17. Dr. Borden S. Veeder, professor of pediatrics, Washington University School of Medicine, St. Louis, is chairman of the program committee.

Bequests and Donations.—The following bequests and donations have recently been announced:

Nathan Littauer Hospital, Gloversville, N. Y., $300,000 by the will of Lucius N. Littauer, founder of the institution.

Bethesda Hospital, Bethesda Home for Foundlings and the Bethesda Old Ladies Home, St. Louis, approximately $200,000, and $35,000 for a playground for the children of St. Louis, by the will of Mrs. Minnie Wood.

Boston University, Boston, $126,000 for new buildings, and an anonymous gift of $100,000 to endow the Borden P. Bowne chair of philosophy.

Blue Grass Sanatorium, Lexington, Ky., $125,000 for a new building to be known as the "Julius Marks Sanatorium," by Leo J. Marks, Columbus, Ohio, in memory of his father, and $25,000 from Moses Kaufman.

Babies Hospital and the Home for Crippled Children, Newark, N. J., each $100,000; St. Barnabas Hospital and the Society for the Relief of Respectable Aged Women, each $50,000, and the Bureau of Associated Charities, $10,000, under the will of Mrs. Effie K. McIntyre of Newark.

Infants Hospital, New York, $100,000, under the will of George A. Draper.

Mount Sinai Hospital, New York, $20,000; Hospital for the Ruptured and Crippled, New York, $2,000, and the Mineola Home for Cardiac Children and the National Hospital for Speech Disorders, $1,000 each, under the will of Adolph Boskowitz.

New York Skin and Cancer and the New York Foundling hospitals, each $15,806, and the New York Nursery and Child's Hospital, $7,903, under the will of James Rufus Smith.

Northern Dispensary, New York, $10,000, by the will of Lambert Luydam.

Mount Sinai Hospital, New York, $7,500; Lenox Hill Hospital, $2,500, and the Roosevelt Hospital, New York, $2,000, by the will of Solomon G. Guggenheimer.

Hahnemann Hospital, New York, $7,550, by the will of Catherine B. Guernsey, in memory of her husband.

Wood Infant Welfare Station, Chicago, $1,400 by branches of the woman's city club.

Beth Moses Hospital, New York, $1,000, by the will of Benjamin Croner.

Atlantic City (N. J.) Hospital, $1,000, by Mrs. Sarah W. Leeds.
Longview, Wash., a site for a hospital by the Longview Company.
Macon, Ga., a twenty-acre site for a tuberculosis hospital by Lee M. Happ.
Johnstown, Pa., a tract of land for the new municipal hospital by the Bethlehem Steel Products Company and the Cambria Iron Company.
Lawrenceburg, Tenn., lots for a hospital building by the King's Daughters.
Manhattan, Eye, Ear and Throat Hospital, New York, his portrait by Waltman, and to the Polyclinic Hospital, his portrait by Mable, under the will of Dr. David Webster.
Mater Misericordiae Hospital, Sacramento, Calif., the medical library of her late husband, Dr. Thomas J. Cox, consisting of more than 200 books, by Mrs. Alice Cox.

FOREIGN

Japanese Hold Memorial Meeting for Ehrlich.—A special meeting in memory of the late Dr. Paul Ehrlich was held in the Kitasato Institute for Infectious Diseases, March 14, under the auspices of Dr. S. Hata and Baron Kitasato, co-workers with Ehrlich. Had Dr. Ehrlich lived he would have been 70 years of age on that date.

New Medical Journals.—Hume House, Dublin, is the office of a new Irish quarterly, the *Journal of Cancer*, published by the Cancer Research Fund of Ireland, which aims to present a complete and accurate record of recent discoveries in connection with the cause and treatment of the disease. ——A new Italian fortnightly, entitled *Annali di Clinica Terapeutica*, has recently appeared. The journal is published in Rome and Prof. Domenico Lo Monaco of the University of Rome is editor.

Biochemistry at Oxford.—The Rockefeller Foundation has donated £75,000 (approximately $337,500) toward the erection of a biochemical laboratory at the University of Oxford, England. It has been decided to set aside 9 acres of the university parks for the science departments. This will give the university, not only a department of biochemistry, but also a fully equipped modern school of pathology, and a department of pharmacology. The old biochemical building will be used by the department of physiology.

International Antituberculosis Union.—The fourth conference of the Union internationale contre la tuberculose is announced to be held at Lausanne in the first week of August. The first topic for discussion is: "Are There Saprophytic Forms of the Tubercle Bacillus Which Are Susceptible of Becoming Transformed, Naturally or Artificially, into Virulent Forms?" The second topic is "Relations Between Tuberculosis and Pregnancy," and the third, "The Effect on the Incidence of Tuberculosis in Different Countries of the Organized Efforts to Repress It." The discussion is to be opened in turn by Calmette of Paris, Forssner of Stockholm and Philip of Edinburgh.

Experimental Biology Research.—Dr. Maurice Arthus, professor of hygiene at the University of Lausanne, offers a course of three weeks of experimental biologic research, free of charge, to those who apply with a description of their aims and previous work. A similar course in 1922 was attended by sixty-six persons from fifteen different countries, including Canada. The work will be along the lines of anaphylaxis, protein poisoning and immunity. Applications are received by Dr. Arthus up to June 15. His address is Institut de Physiologie, Champ-de-l'Air, Lausanne, Switzerland. Our exchanges state that persons taking part in the "Trois semaines de recherches biologiques expérimentales" can obtain board for about 7 francs a day. The course opens July 21 and closes August 9.

Treatment in German Sanatoriums.—The pooling of German sanatorium reports every year and their editing in the *Beiträge zur Klinik der Tuberkulose* enables readers to ascertain the most popular treatment of tuberculosis in that country. In the latest review, edited by Dr. H. Ulrici, the reports of forty hospitals for diseases of the lungs are dealt with. Only eleven of these forty hospitals practiced artificial pneumothorax, 626 of 7,068 patients with open tuberculosis in the second and third stages being given this treatment. In contrast to 8.9 per cent. receiving artificial pneumothorax, 26 per cent. were treated with some form of tuberculin treatment. Ten different tuberculins or tuberculin methods were used by these forty institutions. Sun baths were used in only 1.7 per cent. of all the adult cases of pulmonary tuberculosis, and artificial light in 11.1 per cent. In 84 per cent. of adult male patients the duration of treatment in these institutions was three months or less, and only 15 per cent. of all the cases of open tuberculosis became sputum negative during treatment.

Personal.—The Royal College of Surgeons of England has awarded the Jacksonian Prize for 1923 to Dr. Harold R. Dew of Australia.——Dr. L. O. Romero of Peru recently spoke on "Medical Quackery in South America" at a meeting of the Madrid Colegio de Médicos.——Dr. M. R. Castex of Buenos Aires delivered an address at the Academia de Medicina at Madrid. His subject was "Influence of Spleen Extract on the Functioning of the Pancreas." He was the guest of honor at a reception given by Dr. Recasens.——Fifty medical students from Scotland have been the guests of the medical students at Paris. They came for a brief course of training in obstetrics, and they were distributed among the Pitié, Baudelocque and Tarnier maternities. The visit of this contingent of medical students from Edinburgh is now an annual institution.——Dr. A. M. Stalker was presented with a check for $5,000 on the occasion of his retirement from the chair of medicine at Dundee University, by citizens of Dundee.——Dr. Edgar L. Collis, who occupies the Mansel Talbot chair of preventive medicine at the University of Cardiff, Wales, has been appointed Harben lecturer for 1924. This entails the delivery of three lectures which must embody original research.

League of Nations Health Committee.—The first session of the permanent health committee of the League of Nations met in Geneva, February 11-21. It will meet twice a year. Dr. Thomas Madsen, head of the Copenhagen Serum Institute, was elected chairman; Drs. Velghe, Belgium, Sir George Buchanan, England, and Surg. Gen. Hugh S. Cumming, United States, were elected vice presidents. The members of the health committee are:

France.—Prof. Léon Bernard, chair of medicine, University of Paris, and Dr. L. Raynaud, inspector general of the Algerian Health Service.
Great Britain.—Sir George Buchanan, M.D., senior medical officer, British Ministry of Health.
Switzerland.—Dr. H. Carrière, director of the federal health service.
Brazil.—Dr. Carlos Chagas, director of the Oswaldo Cruz Institute.
Poland.—Dr. Chodsko, former minister of health of Poland.
United States.—Surg. Gen. H. S. Cumming, U. S. Public Health Service, Washington, D. C., and Dr. Alice Hamilton, Harvard University Medical School, Boston.
Egypt.—Dr. A. Granville Pasha, president of the Maritime Health Board.
Holland.—Dr. Jitta, president of the board of health.
Portugal.—Prof. Ricardo Jorge, director general of public health.
Japan.—Shiko Kusama (until appointment of Japanese member).
Italy.—Dr. A. Lutrario, director general of the health administration and Prof. Ottolenghi, Siena University.
Denmark.—Prof. Madsen, director of the state serum institute.
Peru.—Dr. P. Mimbela, professor of medicine, University of Peru.
Germany.—Prof. B. Nocht, director of the Hamburg Institute of Tropical Medicine.
Spain.—Prof. Gustavo Pittaluga, chair of medicine, Madrid.
Belgium.—Prof. O. Velghe, director general of the health service.

Government Services

U. S. Veterans' Bureau News

Drs. John R. McDill, M. H. Allen and Robert F. Souther have been transferred from the medical division of the U. S. Veterans' Bureau to the office management division.——The forty-eight U. S. Veterans' hospitals maintained by the bureau will observe National Hospital Day, May 12, with appropriate services, and the public will be invited to visit the hospitals.

Marine Hospital Service

According to Surgeon-General Cumming, U. S. Public Health Service, there are three times as many patients in the U. S. marine hospitals as there were in 1913, and hospital care now costs about twice as much. The tonnage of the American Merchant Marine increased from 11,893,437 tons in 1914 to 28,886,212 in 1922, and new classes of beneficiaries have been added in recent years. The Employees' Compensation Commission, whose first patients were admitted to marine hospitals in 1916, required 26,722 hospital relief days, 91,144 outpatient treatments and 12,288 physical examinations in 1923. In 1921, all lepers in the United States became beneficiaries of the public health service. Last year 66,737 hospital relief days were given at the National Leper Home (U. S. Marine Hospital No. 66), Carville, La., a station which costs nearly $300,000 a year to operate. Immigrants detained for sickness or observation at Ellis Island required 122,480 hospital relief days in 1923. The per diem cost per patient in the marine hospitals in 1923 was $4.08,

which includes all salaries of surgeons, regular and special nurses and other personnel, food for patients and attendants, light, heat and power, repairs to buildings and some items not included by private hospitals in reckoning cost.

Bonus Bill Discriminates Against Public Health Officers

In the final passage of the soldiers' bonus bill in the Senate the provision was stricken out which granted the privileges awarded in the bill to members of the United States Public Health Service who served in the Army and Navy during the war. The provision was removed on the statement of Senator Smoot of Utah "that the Public Health Service did not care to have any of its members included as beneficiaries under the provisions of the bill." High officials in the Public Health Service at Washington state that Senator Smoot has not correctly interpreted the attitude of the service. They explain that as subordinate officials they have refrained from discussing the bonus, because Secretary Mellon, head of the Treasury Department, is opposed to the bonus bill. They, nevertheless, feel that discrimination against Public Health Service officials ought not to be made in this legislation.

In the debate in the Senate, a mistaken impression went out to the country that a very large number of physicians in the Public Health Service would be beneficiaries under the bonus bill. This is not true, because officers who served in the war period were in a great majority of instances in the higher ranks of the army and navy, and the bonus bill does not include such officers.

A careful survey has been made to ascertain what officials of the Public Health Service would receive insurance benefits under the bonus bill. It appears that no more than thirty-three out of a total of over 800 regular and reserve public health officers will actually receive bonus privileges.

It is clearly a case of injustice and discrimination to eliminate from the bonus bill physicians of the Public Health Service who actually served in the army and navy during the war. About 100 such physicians served in the higher ranks of the army and navy, and because of that fact will receive no benefits under the bonus legislation. The thirty-three physicians who served in junior grades ought to be given recognition.

New Neuropsychiatric Hospital

U. S. Veterans' Hospital No. 95, Northampton, Mass., will be officially opened, May 12. Dr. A. H. Pierce, who is in charge of U. S. Veterans' Hospital No. 44, West Roxbury, Mass., has been selected as the medical officer in charge of the new institution. Constructed at a cost of more than $2,000,000, the hospital buildings are two and three stories high and of fire-proof brick, tile and reinforced concrete construction. Modern appliances adapted to the treatment of neuropsychiatric diseases have been installed. The capacity of the hospital is 462 patients.

Examination for Appointment in Regular Army

The examination of applicants for appointment in the medical corps of the regular army will be held in the United States, Philippines, Hawaiian and Panama Canal departments, July 28 to August 1. Requests for information concerning this examination should be addressed to the Adjutant General, War Department, Washington.

Allowance for Quarters for Indian Service

The Secretary of the Interior has given unqualified endorsement to the bill providing quarters, fuel and light for employees in the Indian Field Service.

Physicians in the service are included in this measure, which is intended to overcome an adverse decision made by the Comptroller of the Treasury, who overruled the long standing practice that permitted physicians and others in the Indian Field Service allowance for quarters, fuel and light. The bill has been favorably reported to the House of Representatives by Representative Snyder of New York, chairman of the Committee on Indian Affairs. The measure amounts approximately to an allowance of $350 a person. The money has actually been appropriated by Congress, but the comptroller made a technical ruling on legal questions involved, necessitating additional legislation before physicians and others in the Indian Field Service can secure the allowance provided in the bill.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 7, 1924.

Sexual Problems at a Church Congress: Birth Control

The Conference on Christian Politics, Economics and Citizenship (known as the Copec) has held its annual meeting, which was attended by representatives of all the churches except the Roman Catholic. Among the subjects discussed was a report of a commission on the relation of the sexes. After much consideration the commission had disagreed with regard to the limitation of births within marriage, and also as to divorce. In regard to these two matters, it therefore submitted no resolutions to the conference. Resolutions that the churches should uphold the Christian standard of purity as equally binding on the two sexes and protesting against all forms of regulating prostitution by the state were submitted. These resolutions were unanimously accepted by the conference. Then the thorny subject of birth control became inevitable. Prof. W. F. Lofthouse, chairman of the commission, stated that they were all agreed that any refusal to have children based on self-indulgence or shirking of duty was indefensible; but some would go farther and say that marriage existed primarily for the production of children. But suppose that the birth of children was feared on physical or economic grounds, and it had to be admitted that in the present state of society there were often abundant reasons for such fears. Should all physical intimacy then come to an end? Some would say "Yes," for marriage that does not involve parenthood is sinful; others, "No," for marriage that does not entail such intimacy entails great perils.

Rev. R. S. Studdert Kennedy declared that the conference could not tabu the question of birth control. "If you are going to ask married men and women to observe celibacy over a long period of years, be careful how you ask them to do it. Do you believe that to bring children into the world as they are brought in is in accordance with the law of God? Is the population of China in accordance with the law of God? The way the question of birth control is being conducted is a scandal, and the question is whether we can control birth control. The present way the means are advertised and sold is the way to get them into the hands of the wrong people in the worst way."

Mrs. E. F. Wise, a member of the Home Commission, moved the following resolution: "In view of the difficulty of the moral issues involved in the practice of conception control in marriage and especially the use to this end of contraceptives, and the insufficiency of the evidence that would justify any decision, the conference, whilst refraining from expressing any condemnation of those who, with due sense of moral responsibility, approve such a practice, urges the churches here represented, either severally or unitedly, to investigate thoroughly and to consider, with the intention of offering definite guidance to perplexed consciences, this and other questions with regard to marriage and parenthood." Mrs. Wise said that in all classes of society the question was agitating the minds of all thoughtful married people. Information was being given in a thoroughly undesirable form, and Christian people could not escape part of the blame, because they had been too pureminded in these matters and people who should look to them for guidance had

gone shamefacedly about it in the wrong way. It was no good for the churches to shut themselves up and judge the question only from the theological point of view. They had to face facts, and not deal with the world as they would like it to be. They had no right to tell the poorest women that it was the law of God that they should bear a child every year, but they should never advocate the use of contraceptives for selfish ends.

Dr. Charles E. Gray, a member of the commission and chairman of the medical advisory subcommittee, said that in another ten years or so the vast majority of the women of this country would be using these methods. There was no question here of selfish indulgence. People who decided on limitation of families at the commencement of their married lives were acting both foolishly and wrongly, but there was in time an inevitable alternative to be faced whether or not to limit the family by abstention or contraceptive methods. As a practicing physician, he unhesitatingly ruled out the first method. For the vast majority of people, abstention was not only deleterious to health but undesirable in other ways. Abstention was abnormal and altered the psychologic relation between man and woman.

Dr. W. H. Tyson, F.R.C.P., of the National Assembly of the Church of England, said that he did not consider it possible for a man and a woman to live together without sexual intercourse. He could not believe that women living in circumstances not fit for dogs were of necessity to have twelve, fourteen or twenty children because abstention was impossible. Contraception was now being carried out by the vast majority of respectable people, and the poor had the right to know how to do it.

Canon Lacey, a member of the commission, did not believe what Dr. Gray had said about abstinence in marriage being either impossible or harmful. The physician was generally acquainted with the abnormal, and we did not want to legislate for neurasthenics. What was to be the end of it all? The end was rapidly approaching in France, just as the end came to the Roman Empire. The end was race suicide.

An amendment was moved to the resolution to delete the words, "and the insufficiency of the evidence which would justify any decision," and also the words, "while refraining from expressing any condemnation of those who, with due sense of moral responsibility, approve such a practice." This was carried, and the resolution as amended was passed by a large majority.

The Nature of Speech

At the celebration of the jubilee of the Physical Society of London, Sir Richard Paget delivered a lecture arranged by the Society of Electrical Engineers on "The Nature of Speech." The standpoint was purely that of the physicist, but the lecture was of considerable interest as a contribution to the physiology of speech. Observation of the resonance of his own vocal cavity, when whispering or breathing the various English vowel sounds, had shown the lecturer that in the case of every vowel the vocal cavity produced two audible resonances, due to the passage of air through the cavity as a whole. The pitch of each resonant component could be varied over a few semitones without appreciably altering the vowel character. The lecturer demonstrated the existence of two resonances by clapping the hands in front of the mouth so as to drive puffs of air into the vocal cavity. He further showed that a recognizable vowel sound, as in "all," could be produced by blowing a model having a "larynx" interposed between two resonators, so that the energizing air passed first into the one resonator, then through the "larynx," and finally through the second resonator. This experiment indicated that resonance in the human trachea might have an appreciable bearing on vowel production. The lecturer also demonstrated a hand operated talking machine, or cheirophone, in which the "larynx" consisted of a single rubber strip, of which the pitch could be varied over an octave or more by varying the air pressure, while a double resonator was formed by the operator's hands. In this model the pharynx tube of the artificial larynx was held between the thumb and first finger of the one hand, the other three fingers of which operated as a tongue, while the thumb and first finger of the other hand operated as the variable opening, or "lips," of the front of the resonator. By this device the lecturer showed that the various vowel sounds could be recognizably produced, as well as a number of spoken words, such as "Hullo," "How are you?" "Hip, hip hurrah," and "O I love London."

Smallpox Menace

No fewer than 108 cases of smallpox were notified in England and Wales last week. The number in the previous week was 101. There thus continues a steady increase in this disease throughout the country which, compared with earlier years, is very disquieting. But, as frequently pointed out in THE JOURNAL, our neglect to enforce vaccination in deference to the clamors of the antivaccinationists must have calamitous results.

Maternal Mortality Too High

In a report to the ministry of health on maternal mortality, Dr. Janet M. Campbell, a senior medical officer of the ministry, states that the maternal mortality rate is unnecessarily high in England and Wales. The problem of excessive puerperal mortality and morbidity affects all parts of the country, though some to a greater extent than others. Avoidable maternal deaths are a matter of everyday occurrence, and large numbers of women are injured, often permanently, through lack of skilful treatment at childbirth. Generally speaking, maternal mortality tended to be highest in rural, sparsely populated counties, and in industrial districts, notably those associated with the textile industries in Lancashire and Yorkshire, and with coal mining; and tended to be lowest in the South of England, in districts in and around London, and in certain large cities, such as Birmingham, Manchester and Liverpool. A careful midwife and a skilful physician rarely lost a patient, given a reasonable chance for the exercise of their competence. In a large number of maternal deaths there had been failure at some point to practice proper supervision. Employment of married women had probably little direct influence on the maternal death rate, at any rate so far as the nature of the occupation was concerned.

In her recommendations, Dr. Campbell suggests an adequate education for medical students, as recommended by the general Medical Council, and the employment of the trained midwife for maternity nursing. Local authorities should provide antenatal and postnatal care by a professional attendant, and also by the establishment of maternity centers; and the provision directly, or by means of a subsidy, of maternity beds. For the benefit of women at their homes, there should be a sufficient service of competent midwives, by paying them, when necessary, the whole or part of their salaries in sparsely populated districts, or by assisting in the formation of district nursing associations. There should be an investigation by the health officer of all maternal deaths due to childbirth, and of all cases of puerperal infection, whether fatal or not. Among the social and educational measures advocated are: (1) provision of nourishment for necessitous expectant and nursing mothers; (2) consideration whether an extension or modification of sickness benefit during expectancy under the national Health Insurance Act is desirable; (3) widespread educational propaganda through official and voluntary agencies for the instruction of women themselves.

Guardianship of Infants Bill

A bill to redress the present inequality which gives the father the guardianship of children, to the exclusion of the mother, has passed a second reading in the House of Commons. This was moved by Mrs. Wintringham, a woman member. The bill provides that the mother of every legitimate child shall be guardian jointly with the father for all purposes, and have equal authority, rights and responsibilities. It further provides that the parents of every legitimate child under 16 shall both be liable for the maintenance and education of that child according to their means. The bill also contains powers to enforce orders made by the court regarding the custody, maintenance and education of infants. The women of the country, Mrs. Wintringham said, wanted the bill in the interests of their children. There were two classes of women—those who had the custody of their children, and those who had not. The "have-nots" were in a majority. They were legal wives, but had no custody of their children and no say as to where they should be educated or where they should live. Those who had possession of their children were the unmarried. Strangely enough, the present law made them the sole guardians of their children. She considered that it was a wrong idea in the home life that a woman should be in an inferior status to a man. Marriage was a copartnership, and any decision arrived at should be by reasonable agreement. The modern tendency was to equalize the rights of men and women in regard to property and civil rights, and the bill would extend this to domestic rights. The mother was qualified equally with the father to give counsel in regard to what was best for the child.

PARIS

(From Our Regular Correspondent)

April 4, 1924.

The Standardization of Insulin

Recently at the Academy of Medicine, Prof. A. Desgrez, H. Bierry and F. Rathery presented a communication on insulin, which gave rise to an interesting discussion. They criticized the method adopted by the Toronto physiologists for the standardization of insulin, and insisted that the physiologic test by no means indicates the true potency of the product. Regarding the proposal of certain American authors to establish a relation between the unit of insulin and the amount of carbohydrate it metabolizes, Desgrez and his co-workers show that there is no constant relation between these two factors, and that it varies greatly in different patients and in the same patient. The authors propose, therefore, that insulin be administered according to weight. They say that pure sterile, powdered insulin injected in two fasting dogs weighing from 10 to 12 kg. should, with a dose of 0.005 mg. per kilogram of weight, effect a decrease in blood sugar of from 40 to 50 per cent. in two hours. This test, however, would prove only that the insulin is potent. It could not be assumed that a given weight of insulin will produce in a diabetic patient the same effect it produced in a dog. Patients with diabetes have metabolic disorders that vary in intensity. Their diets differ in composition and in caloric value, and the dose of insulin should be determined for each patient by an examination of the blood and the urine.

Prof. Marcel Labbé stated that he could see no advantage in substituting a dose based on weight for a dose expressed in a physiologic unit. If we were dealing with a definite chemical product we could be reasonably sure that the same weight would produce the same effect; but with insulin it is not so. The therapeutic value of a given weight of the substance is not known until we have applied the physiologic test. Dr. Hallion was of the same opinion. He stated that so long as we are unable to obtain pure insulin, the physiologic test remains the sole means of measuring its potency. Professor Chauffard, however, supported the plan of Desgrez, saying that to determine the dose by weight would be a distinct advance. The suggestion of American investigators to establish a clinical unit of insulin distinct from the physiologic unit, the former to be one third of the latter, Chauffard says is wrong.

The Declaration of Rights of Children

The International League of Child Welfare at Geneva aims to aid and protect children of all countries without distinction as to nationality, race or religion. It comprises a number of affiliated associated committees and has the support of the catholic, protestant, Jewish orthodox, Jewish liberal and Mohammedan churches. With funds maintained by donations from all parts of the world, it has aided, in the last four years, more than a million children in forty different countries. The Comité français de secours aux enfants, 10, rue de l'Elysee, Paris-VIIIe, is affiliated with the league.

A declaration of rights of children has recently been adopted which the league holds should be respected by all civilized countries. It is as follows:

In the declaration of rights of children, called the Declaration of Geneva, men and women of all nations should give to children the best gifts in their possession, and affirm their rights irrespective of race, nationality and religion.

1. Children should be placed in an environment in which they can develop normally, physically and mentally.

2. A child that is hungry should be fed; a child that is sick should be cared for; the backward child should be encouraged; the child that has gone astray should be reclaimed; the orphan and the deserted child should be given a home and their distress relieved.

3. Children should be the first to receive aid in time of distress.

4. A child must be put in a position to earn his living and should be protected against exploitation.

5. Children should be brought up to believe that their best qualities must be used in the service of their fellows.

A Crusade Against Infant Mortality

A member of the municipal council, M. de Fontenay, has proposed a crusade to induce parents of small means to take their young children to a consultation center. He says that the city should prepare leaflets which indicate the location of consultation centers in Paris and which are the same size as the family pass-book. These should be given out (1) by the director of the bureau of vital statistics to every person who reports the birth of a child; (2) by the directors of maternity hospitals to every woman who has just been delivered, and (3) by the directors of children's hospitals to every mother who brings in a child under 2 years of age and who has not yet visited a consultation center for infants.

In Memory of Legrand du Saulle

Dijon, the birthplace of the alienist Legrand du Saulle, has voted to name a street in his honor. The *Gazette des hôpitaux*, which Legrand du Saulle served many years, speaks highly of his scholarship and his character. During the tragic days of the Commune, he was chief physician at the station of the prefecture of police, where with kindness and courage he rendered great service to hostages. In reference to this period Legrand du Saulle praises the medical profession:

What an admirable profession is medicine, which puts a man above the events that engulf a country in blood; which procures him an entrance everywhere, affording thus an opportunity of doing good everywhere; which permits him to see and to hear everything and yet to preserve silence; which allows him to regard all persons—even the most wayward, the most unhappy or the most sinful—as worthy alike of his solicitude; a profession which permits him to carry on undis-

turbed by sounds from without, and which enables him to serve with the same emotions the conqueror and the conquered, the beggar on his pallet of straw, the archbishop of Paris in his prison, the Prussian spy sentenced to death, the justice of the supreme court in a cell, and to receive from all of these the same marks of deference and the same words of gratitude.

A Prison Inquiry

Several months ago, M. Strauss, then minister of public health, appointed Drs. Marcel Briand and Raymond Mallet to conduct a psychiatric inquiry in several prisons of the department of the Seine. In their first report, Briand and Mallet stated that a number of the inmates of these prisons would be more properly placed elsewhere; especially the recidivists, whose mental condition sometimes causes the judge to show clemency, on the basis of a medicolegal report. The investigators point out that the mental state of these prisoners does not change. They propagate their kind, and society is given no permanent protection. Briand and Mallet say that physicians should examine from time to time the mental state of prisoners whose records permit a presumption that their mind is unbalanced.

The Frequency of Cancer in Marseilles

The statistics that are generally cited to support the opinion that cancer is increasing are usually based on the relative number of cases seen by physicians in a given region. Dr. Leon Imbert, professor of clinical surgery in the Ecole de médecine at Marseilles, believes that hospital statistics are more accurate. They are usually more carefully observed than cases in private practice, and are more often controlled, either by operation or by necropsy. Hospital records can also be traced back further and thus give more accurate impressions. Taking these facts into consideration, Imbert has gone through the records of the hospital Hôtel-Dieu in Marseilles from 1871 to 1922, a period of more than fifty years, although from 1914 to 1919 the Hôtel-Dieu was used almost exclusively for wounded soldiers. It is interesting to compare the average number of admissions for cancer during 1871, 1872 and 1873 with the admissions for 1920, 1921 and 1922:

Number of Admissions for Cancer in the Hôtel-Dieu, Marseilles

	Per 10,000 Men	Per 10,000 Women
For the years 1871, 1872, 1873.....	70	240
For the years 1920, 1921, 1922.....	345	538

The increase is certainly great. The rate of increase is 5 to 1 for men and more than 2 to 1 for women. Women still retain a numerical superiority, owing to a high proportion of cancers of the breast and uterus. If we omit cancers of these two organs in women and cancer of the reproductive organs in men, it will be noted that the proportion of cancers in women is much smaller than in men.

These statistics do not take account of the unquestionable progress in diagnosis and treatment. Is the increase of cancer cases not due to better means of detecting them, and to the patients being better informed, and thus more inclined to consult physicians? From this point of view, the special services enable one to make comparisons that are convincing. The Hôtel-Dieu at Marseilles did not have before the war a genito-urinary or an otorhinolaryngologic surgical service. These services were opened immediately after the war, and it is interesting to see what their influence has been on the number of cancers observed. Cancer of the larynx does not appear at all in the hospital's records for 1871, 1872 and 1873, but in 1920, 1921 and 1922, the admission rate for men only was 42 per 10,000. Cancer of the genito-urinary organs in men was noted only once during 1871, 1872 and 1873, but in 1920, 1921 and 1922 the admission rate was 54 per 10,000 admissions. The influence of special services appears to have manifested itself by attracting patients. No other variety of cancer shows a comparable increase. The kind that comes nearest is cancer of the stomach. The increase among men was from 8 to 69 patients per 10,000 admissions; among women from 21 to 62. But, for this type of cancer, Imbert thinks it is evident that the surgical services attract more and more patients and thus create an apparent increase, which has no basis in fact. Cancer of the tongue rose from 7 to 39; cancer of the face from 14 to 49; cancer of the liver from 7 to 19; cancer of the intestine from 0 to 9; cancer of the rectum from 15 to 17. The group called "miscellaneous" increased from 22.5 to 47 on the basis of 10,000 admissions. It can be seen that the marked increase of known cancer cases in men is due (1) to the creation of special services, and (2) to progress in surgical treatment.

The apparent increase in the frequency of cancer in women is much less than in men. The creation of special services has not affected women to the same extent that it has men. Cancer of the larynx and urinary organs is quite exceptional in women. Neither was known in the seventies; they have also been unknown since 1920. Cancer of the uterus maintains its preponderance over all other cancers but its proportionate increase is comparatively small. It has increased from 131 to 203 cases per 10,000 admissions. In the seventies it represented almost half of the total cases in women, but since 1920 it has represented only a quarter of the cases. Cancer of the breast has increased more rapidly. It has risen from 21.8 to 100 per 10,000 admissions. The same is true of cancer of the stomach, which in the seventies represented 21.8 and represents now 62 per 10,000. If we add this rate (62) to the rate for men (69), we get a rate of 131; or the highest in the general statistics, except for cancer of the uterus. Is it not probable that this apparent increase is due chiefly to roentgenographic diagnosis? Cancer of the face has risen from 5 to 48 per 10,000; cancer of the intestine, from 10 to 12; cancer of the rectum, from 0 to 24; cancer of the liver, from 0 to 24, and "miscellaneous," from 50 to 67.

Imbert concludes from these statistics that the number of cancer cases is constantly increasing, but it seems that the increase is due, at least in large part, to the fact that patients are better informed about cancer and seek physicians earlier, and physicians—themselves now better informed—make more often an accurate diagnosis.

HOLLAND

(From Our Regular Correspondent)

March 23, 1924.

Emergency Medical Service

In an address delivered in the medical department of the University of Amsterdam and published in the *Nederlandsch Tijdschrift voor Geneeskunde*, Dr. Mijnlieff gave an historical account of the organization of first-aid stations, and outlined how an emergency medical service should function. It is not sufficient to have good hospitals and the best of surgeons, if the organization, in a wider sense, is defective. It is equally important that there be a method of summoning aid in case of accident that is as simple and rapid as possible, and that the first-aid and transportation service be highly efficient.

1. The first-aid service should be a municipal service, with a responsible head. All the cities of Holland except Utrecht and Rotterdam have such service. The founding and management of a first-aid service should not be left to philanthropic societies.

2. It must be possible to get into immediate communication with the central notification service at all times of the day.

It is the duty of the director of the notification service to send to the scene of the accident personnel and equipment which will assure the victim first aid and prompt and comfortable transportation.

3. At the hospital center there should be at all times a surgeon and a nurse.

4. The emergency service must have adequate transportation: automobiles, ambulances and wheel litters.

5. It is indispensable that the notification service and the garage be in the same establishment as the surgeon and nurse, that is, within the grounds of the hospital.

Most large cities of Holland have a good emergency service, but that at The Hague is the best. It is the only city that has a surgeon and a nurse on duty constantly.

Abscess of the Spleen

Smits has observed some rare types of abscess of the spleen. As a rule, abscesses of the spleen are of secondary origin and result from: (1) an infarct or metastasis; (2) a traumatism, or (3) an abscess in an adjacent organ. Smits observed four cases, one of which was a complication of endocarditis, another of typhoid, a third of puerperal infection, and the fourth of gonorrheal salpingitis. He saw two other cases which followed an abscess in an adjacent organ; one a perinephritic abscess; another case, an amebic abscess.

Mortality Rates of Large Cities

Following publication by the League of Nations of a report that compares the mortality curves month by month of large cities of England, France, Germany and the United States, Dr. J. J. Van Loghem prepared a similar report for cities of the Netherlands, whose population exceeds 100,000. This report shows a favorable condition in the Netherlands. In the other countries, the mortality rate in winter ranges around 15 per thousand, and in summer around 10. In Holland, the mortality rate for 1923 was highest in March, reaching 10.8, and lowest in September (7.8). When the figures are studied week by week, however, the baneful influence of the hot spell from July 8 to 14, 1923, is observed. During these days the mortality of the three largest cities (Amsterdam, Rotterdam and The Hague) reached an exceptionally high figure (15.2).

Accidents Due to Electricity

The report of the chief inspection department for labor for 1922 devotes a chapter to accidents due to electricity during that year. Whereas in 1909 there were only ten accidents of this kind, the installation of many electric services throughout the provinces brought about a considerable increase in the number of accidents in 1922, the total rising to 141. Seventeen of these were fatal, and it is important to note that fifteen of the fatal cases resulted from low voltage (from 127 to 300 volts), while only two were due to high voltage (almost 10,000). Alternating currents caused all of these deaths. Of 124 less serious accidents, 107 were caused by low and seventeen by high tension currents; 109 accidents were due to alternating, and fifteen to direct current. Among the lesions most frequently observed were seventy-eight burns of the hands and arms, twelve injuries of the eyes, and two cases of mental confusion, which persisted several days. In fifty-four cases the injured were incapacitated from work for from one to eight weeks.

Campaign Against Yaws in the Dutch East Indies

For several years, Dr. Winckel has studied the campaign against yaws in the Dutch East Indies, observing from year to year improvement in results. Neo-arsphenamin has been so wonderfully effective that the natives, who at first were genuinely distrustful of the remedy, now bring their patients readily to practitioners and to the policlinics created for this purpose.

As a rule, before undertaking any active treatment in a district, the people are informed of the purpose and usefulness of the campaign. Meetings are held, and natives who have been cured are presented. Free treatment is then offered the indigent. As soon as they are cured, they serve likewise as a means of propaganda to attract other patients to the policlinics. Physicians take trips about the country also and thus are able to reach a larger number of patients. From the beginning of the campaign (1919) until 1923, about 3 kilograms of neo-arsphenamin has been used for about 900,000 patients.

Kersbjerg recently published an article in the *Geneeskundig Tijdschrift voor Ned. Indie* on bismuth in the treatment of yaws. The dose used was 100 mg., the injections being repeated every four days. Bismuth has the advantage over neo-arsphenamin that its injection causes no pain. The fear of pain is one factor that causes natives to resist treatment. Kersbjerg states that in six cases treated with bismuth the results were just as good as with neo-arsphenamin. It will be interesting to have this work confirmed, for it will doubtless modify the present method of treatment.

Cooperative Buying as Applied to Insulin

The high cost of insulin has given rise to the original idea of a cooperative society to help bear the expense of insulin therapy. The society, which may be organized by two physicians of Utrecht, would keep a stock of insulin of different brands, and would furnish it at cost to physicians and patients.

Food and Clothing as Factors in School Life

In a recent report, the Association of Netherlands Teachers calls attention to the difference in capacity for work shown by the children of the poor and the children of the rich. Leaving out of account differences in general hygienic and sanitary conditions, the report shows the preponderant influence of food and clothing on child life. In 1900, the law pertaining to compulsory school attendance provided for the organization of societies to ameliorate social conditions among pupils. In 1921 it was attempted to make the organization of these societies obligatory. Inquiry has shown that in 1920 such societies existed in only eighty-four of the communes, and in only thirty-seven was their organization official. In the remainder, the work was supervised by private societies. The last report of the association emphasizes that the question of finance should not solely decide whether a child shall receive the benefits of societies organized to supply school children with supplementary food and clothing. Teachers and school physicians should have the right to request that certain children receive the benefits afforded by these societies, for it is not poverty alone that causes children to receive insufficient care. In 35 per cent. of cases, malnutrition is due to nervousness; in 18 per cent., to the absence of mothers, who work away from home, and in 21 per cent., to the poverty or sickness of parents; in 23 per cent., negligence of the mother could be shown, and in 3 per cent., work which children did outside of school had considerable influence.

Aerophagy

Dr. Steenhuis presented recently to the Nederlandsche Vereeniging voor Röntgenologie an interesting communication on the clinical and the roentgenographic aspects of aerophagy. It may be a hypersecretion of saliva due to an esophageal or gastric reflex, which causes repeated deglutition and consequently a concomitant absorption of air, or it may be an essential aerophagy, which occurs in nervous persons—especially immediately after meals. This fact causes the patient to attribute his trouble to eating.

A roentgenographic examination showed in the cases presented by the author a cardiospasm, which was revealed by

the resistance to the passage of thick barium paste, whereas milk passed readily. The stomach was much dilated and presented an enormous pocket of air. It was divided in the middle into two parts, presenting the picture of an hourglass, although no neoplasm or niche could be discerned. The author is inclined to attribute to aerocolia this hourglass type, which simulates a mediogastric stenosis.

The Prehistoric Netherlanders

In a previous letter I referred to a course in anthropology at Amsterdam. The *Nederlandsch Tijdschrift voor Geneeskunde* devotes a whole number to various anthropologic ideas brought out in this course. Professor Bolk gave an interesting study on the composition of the present Netherlandic folk complex, going back to the prehistoric period and discussing the progressive development of the population. He made a fundamental distinction between two types of primitive inhabitants. It appears that in the settlement of the country, the influx of people conformed to general laws, and immigrants followed the large water courses and the coast.

The first part of Holland to be inhabited was the south, and immigration extended along the Meuse and the Escaut. The first type of inhabitant was the Alpine man, who entered the country along the seacoast, whence he gradually dropped down into the interior of the country. The second type, the Nordic man, came from Scandinavia after the recession of the glaciers from the nothern part of Holland. Evidence of these facts is sufficiently distinct to distinguish a type of man resembling the Britons of northwestern France and of southern England (Cornwall), and another type bearing a strong resemblance to the Scandinavian peoples. The paths of these two streams of people crossed, and they finally became more or less amalgamated. But this prehistoric feature is not the only factor that determined the present Netherlandic complex. Two factors have entered since the modern geographic configuration of Holland became established. Two topographic features were barriers to the Saxons and the Franks; namely, the Bourtanger and the Peel swamps, and, a little farther to the South, the Ardennes Plateau; when these invaders finally burst through, the barriers still halted the wave of immigration at intervals. The northern provinces were ultimately overrun by invasion of Saxons, while the south was invaded by offshoots of the Franks, the main body of whom entered the Belgian provinces. Thus, it can be seen the population of the Netherlands is heterogeneous. It is a problem to trace the origins of a people whose country was open at the North, the South and the East to the influx of shifting tribes.

BERLIN

(From Our Regular Correspondent)

April 5, 1924.

An Armistice Between Health Insurance Societies and Physicians

Recent negotiations between physicians and the health insurance societies have led to the conclusion of an armistice. Members of health insurance societies may now have without charge the service of their former panel physician. Physicians will be paid by the societies, according to a fee schedule covering various services, on a basis agreed to by both parties. During the armistice, or at the latest by June 1, a new contract between the societies and the physicians will be drawn up.

Retirement of Professor Gottstein

Professor Gottstein, director of the medical department of the Prussian ministry of public welfare, retired, April 1, on reaching the age limit. A strict interpretation of the law would have led to his retirement last year, but a special order allowed him to remain at his post. Gottstein was for many years director of the municipal health service of Charlottenburg, where the quality of his work had a nation-wide influence. This service was even more exceptional because it was his first public position. He had, however, made studies of public health problems, and he was one of the first to promote social hygiene. Naturally, his best work as director of the Prussian medical health service was in this field of activity. Under his inspiration, the academies of social hygiene for the training of state and district health officers were founded in Charlottenburg, Breslau and Düsseldorf, and although he was not able to develop the Prussian medical service as he would have liked, much credit for progress that has been made is due to him.

Economy in Care of the Sick

The economic situation in Germany makes it necessary to limit expenditures for the care of the sick. How to give patients adequate care without too great expense was discussed at the last meeting of the federal health council. Professor Kraus of Berlin, Prof. Frederick Müller of Munich, Professor Straub and Professor Jadassohn of Breslau took part in the discussion. American physicians may be interested in the proposals of Professor Kraus, which were published in a recent article in the *Deutsche medizinische Wochenschrift*. He insists that every physician shall carefully determine whether medicine is actually needed in a given case. Writing prescriptions for the sole purpose of giving the patient something should cease, since it is waste. A physician should consider whether he can accomplish the same purpose by simple therapeutic agents rather than by prescribing expensive drugs. Physicians must not prescribe more than is absolutely necessary, and they should encourage patients to prepare simple remedies for themselves. In many cases the older and simpler drugs that are cheaper than those put out by modern pharmaceutic houses will accomplish the same results. There is too much covering up of unpleasant taste of certain remedies, when it is not absolutely needed. This adds to the price. Separate powders are usually more expensive than tablets prepared in large quantities; pills can be made up at less than half the cost of powders. The cost of a trip to a spa can frequently be saved. Treatment at home can often be made to suffice. Physicians should not prescribe expensive foreign mineral waters when domestic products will serve the same purpose. "There are," says Kraus, "many cases in which the physician, by making tactful inquiries and giving hints as to diet and other matters, can save patients not only in the cost of drugs but also in many other things, without injuring their health in the least." The health insurance societies were adversely criticized for methods that injure the health of their members.

In recommendations that the council drew up, Professor Kraus' proposals played a large part. Simple and economical treatment was demanded, and it was emphasized that the most effective remedy is always cheapest even though it is expensive. Of the new remedies, physicians should prescribe only those whose efficacy has been confirmed. The importance of instruction in hygiene and right living by the physician was recognized in the report.

League of German Women Physicians

The purposes of the Bund deutscher Aerztinnen are set forth under four heads: (1) an opportunity for the women physicians of Germany to form a union; (2) the study of social hygiene from the standpoint of medical women; (3) the drafting of legislation in social hygiene from the point of view of the woman physician, and (4) care of superannuated women colleagues, and the creation of a fund to aid young women studying medicine. The league does not endeavor to study problems of medical science or to protect its members' economic interests.

Marriages

CLAUDE WALLOP COLONNA, Lieutenant Commander, M. C., U. S. Navy, Mare Island, Calif., to Miss Louise Braden of San Francisco, March 15.

JAMES R. HUDNALL, Captain, M. C., U. S. Army, West Point, N. Y., to Miss Harriet Elizabeth Pierrepont of Rochester, March 15.

JOHN WILLET BRUNER to Miss Elsa Riggins, both of Bloomsburg, Pa., at Philadelphia, March 20.

CORNELIUS DEWITT BRISCOE, Ancon, Canal Zone, to Miss Dorothy Andrews of San Francisco, recently.

HARRY F. COHEN, Jersey City, N. J., to Miss Ethel V. Myneman of Oyster Bay, N. Y., April 6.

RAY H. DEAN to Miss Marie Clifford, both of Washington, Iowa, at Sigourney, February 4.

THEODORE W. CORWIN to Mrs. Gertrude C. Richman, both of Newark, N. J., March 8.

JOHN S. EYNON, Chester, Pa., to Miss Charlotte Reilly of Philadelphia, recently.

ALDRICH ROBERT BURTON to Miss Rita Dix, both of Philadelphia, April 26.

IRA E. SLOAN to Mrs. Winifred Evans, both of Johnston, Pa., recently.

Deaths

James Duncan Gatewood ✙ Commodore, U. S. Navy, retired, Washington, D. C.; University of Virginia Department of Medicine, Charlottesville, 1879; aged 66; died, February 27. Dr. Gatewood became an assistant surgeon in the Navy in 1880, a medical director in 1911, and was retired for age, May 24, 1921. He was in command of the Naval Medical School and Naval Hospital, Washington, D. C., 1912-1916; at one time president of the Naval Examining Board; member of the National Research Council; delegate to the International Congress on Leprosy, Berlin, 1897, and the International Sanitary Conference on American Republics, Mexico City, 1907.

Hiram Read Stilwill ✙ Denver; Missouri Medical College, St. Louis, 1898; University of Illinois College of Medicine, Chicago, 1901; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly instructor in ophthalmology at the University of Colorado School of Medicine; on the staffs of the Mercy Hospital, the Denver Orphans' Home, and the Jewish National Hospital for Consumptives, Denver, and the Swedish National Sanatorium for Tuberculosis, Englewood; aged 51; died, April 12, of pneumonia.

Albert Frank Dunsmore, Barnesboro, Pa.; Baltimore Medical College, 1900; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, during the World War; on the staff of the Miners' Hospital of Northern Cambria, Spangler; aged 49; died, February 28, at the University Hospital, Philadelphia, of leukemia.

Henry R. Price ✙ Brooklyn; University of Pennsylvania School of Medicine, Philadelphia, 1880; member of the American Ophthalmological Society; on the staffs of the New York Eye and Ear Infirmary, New York, and St. Catharine's Hospital, Brooklyn; aged 74; died, April 17, at the Johns Hopkins Hospital, Baltimore, of senility.

Eugene Charles Gehrung ✙ Denver; St. Louis College of Physicians and Surgeons, St. Louis, 1870; member of the Missouri State Medical Association; delegate to the International Congress of Physicians and Surgeons in Berne, Switzerland, in 1891; aged 83; died, April 11, of senility.

John G. Orton, Binghamton, N. Y.; Medical Department of the University of the City of New York, 1853; member and at one time president of the Medical Society of the State of New York and the American Public Health Association; aged 96; died, April 21, of senility.

Simon Burton Langworthy ✙ Leavenworth, Kan.; Kansas City (Mo.) Medical College, 1887; formerly lecturer and professor of gynecology at the University of Kansas School of Medicine, Rosedale; member of the school board; aged 65; died, April 15, of heart disease.

Frank Edwin Peckham ✙ Providence, R. I.; Medical School of Harvard University, Boston, 1890; past president of the Rhode Island Medical Society; member of the American Orthopedic Association; aged 61; died, March 9, of myocarditis and angina pectoris.

Ira James Gibson ✙ Captain, M. C., U. S. Army, Garden City, N. Y.; Chicago (Ill.) College of Medicine and Surgery, 1909; served in France during the World War; aged 39; died, February 15, at the Walter Reed General Hospital, Washington, D. C.

Charles MacLellan ✙ Trenton, Ont., Canada; University of Toronto Faculty of Medicine, 1872; member of the Illinois State Medical Society; formerly a practitioner in Chicago; aged 80; died, April 19, of senility, in Townsville, Australia.

Harold Frederick Wagner ✙ Massillon, Ohio; Western Reserve University School of Medicine, Cleveland, 1916; member of the city council; served in the M. C., U. S. Army, during the World War; aged 36; died, March 11, of influenza.

Clarendon W. Barron, Columbia, S. C.; Medical College of the State of South Carolina, 1895; member of the South Carolina Medical Association; aged 51; died, April 4, at the Orange General Hospital, Orlando, Fla., of heart disease.

Byron Bedford Luck ✙ Breckenridge, Texas; Medical Department of Emory University, Atlanta, 1916; member of the Medical Association of Georgia; aged 34; died, April 7, at a hospital in Fort Worth, following an operation.

Willis I. Cottel, Portland, Ore.; University of Louisville (Ky.) Medical Department, 1877; also a druggist; formerly member of the city council, and member of the state legislature; aged 71; died, April 7, of senility.

John Peebles Proctor ✙ Athens, Ga.; University College of Medicine, Richmond, Va., 1903; member of the Medical Society of Virginia; aged 48; died, April 13, of injuries received in an automobile accident.

William Miller Stover ✙ San Luis Obispo, Calif.; University of California Medical School, San Francisco, 1896; formerly mayor of San Luis Obispo; member of the school board; aged 57; died, April 4.

Thomas Matlack, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1901; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 49; died, April 15.

William Aaron Miller, Elkader, Iowa; Wisconsin College of Physicians and Surgeons, Milwaukee, 1897; member of the Iowa State Medical Society; aged 53; died, April 2, of cerebral hemorrhage.

Edwin Sac Hennessey ✙ Napa, Calif.; Medical College of Indiana, Indianapolis, 1884; formerly county physician and president of the city council; aged 60; died, April 2, following a long illness.

Edward Bancroft, Huntington, W. Va.; University College of Medicine, Richmond, Va., 1912; intern at the Chesapeake and Ohio Railway Hospital, where he died, April 8, of pneumonia, aged 37.

Curtis Norton Duncan, Louisville, Ky.; University of Louisville Medical Department, 1908; member of the Kentucky State Medical Association; aged 44; died, April 11, of pneumonia.

Alice M. Hackley, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1893; formerly on the staff of the Woman's Hospital; aged 55; died, April 9, following a long illness.

William C. Henderson, Battle Creek, Mich.; Hering Medical College, Chicago, 1897; member of the Michigan State Medical Society; aged 57; died suddenly, April 3, of cerebral hemorrhage.

Orville A. Bigham, Batesville, Ind.; Medical College of Indiana, Indianapolis, 1888; member of the Indiana State Medical Association; aged 59; died, April 6, following a long illness.

Horace E. Jones, Anderson, Ind.; Medical College of Ohio, Cincinnati, 1873; member of the Indiana State Medical

✙ Indicates "Fellow" of the American Medical Association.

Association; Civil War veteran; aged 78; died, April 13, of senility.

Irl Edward Holcomb, Fort Worth, Texas; Baylor University College of Medicine, Dallas, 1920; member of the State Medical Association of Texas; aged 29; was shot and killed, April 7.

John Drake Mandeville, Champaign, Ill.; Rush Medical College, Chicago, 1875; member of the Illinois State Medical Society; Civil War veteran; aged 80; died, April 14, of senility.

Henry George Rawers, Chickasaw, Ohio; Rush Medical College, Chicago, 1891; member of the Ohio State Medical Association; aged 57; died, April 4, of heart disease.

Joseph Raymond Kirk, Paw Paw, W. Va.; Maryland Medical College, Baltimore, 1901; aged 45; died, April 8, at the Allegany Hospital, Cumberland, Md., of pneumonia.

Edward B. Thompson, Peoria, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1892; member of the Illinois State Medical Society; aged 61; died, March 30.

Charles Eli Bruce, Boston; Bellevue Hospital Medical College, New York, 1873; formerly member of the board of education; aged 72; died, April 18, of senility.

Earl Bentley Dennis, St. Louis; Chattanooga (Tenn.) Medical College, 1901; Dearborn Medical College, Chicago, 1905; aged 50; died, April 5, of heart disease.

Thomas Benton McDonald ✠ Cumberland, Md.; Georgetown University School of Medicine, Washington, D. C., 1895; aged 52; died, April 16, of pneumonia.

Byron Lewis, Floyd, Iowa; Louisville (Ky.) Medical College, 1891; member of the Iowa State Medical Society; aged 67; died, April 5, following a long illness.

Augustus Walker Buck ✠ Fall River, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1892; aged 58; died suddenly, April 12.

Charles Fitzsimmons Davidson ✠ Easton, Md.; University of Maryland School of Medicine, Baltimore, 1888; aged 59; died, April 16.

Willis Canon Tanner, Harrison, Neb.; University Medical College of Kansas City, Mo., 1898; aged 63; died, April 1, at Norfolk.

Sue Radcliff ✠ Yonkers, N. Y.; Woman's Medical College of Baltimore, 1894; aged 60; died, April 15, following an operation.

Donald Wilmott Brusie, North Branch, Mich.; University of Michigan Medical School, Ann Arbor, 1922; aged 23; died, April 7.

Morris Cisin ✠ New York; Medical Department of the University of the City of New York, 1888; aged 66; died, April 8.

William Lewis Brown, Lebanon, Ohio; Pulte Medical College, Cincinnati, 1882; aged 69; died, March 31, of tuberculosis.

Bernard Richard Lee, Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1879; aged 67; died, April 15.

William Bailey Sullivan, McCain, Tenn.; Vanderbilt University Medical Department, 1884; aged 62; died, January 30.

William Louis Gleaves, Kansas City, Mo.; Northwestern Medical College, St. Joseph, 1885; aged 66; died, April 5.

Arthur Stanley Torrey ✠ Gloucester, Mass.; Dartmouth Medical School, Hanover, 1909; aged 40; died, April 8.

William Mastin McGrew, Norborne, Mo.; St. Louis Medical College, 1874; aged 79; died, April 9, of senility.

R. W. Colville, Dayton, Tenn. (years of practice); Confederate veteran; aged 81; died recently of senility.

Gustave Golseth ✠ Jamestown, N. D.; Illinois Medical College, Chicago, 1905; aged 47; died, February 15.

Siremba Shaw, Chicago; Rush Medical College, Chicago, 1882; aged 73; died, April 17, of paralysis.

Isaac S. Kennedy, Salem, W. Va. (years of practice); aged 81; died, April 11, of paralysis.

John D. Morgan, Rose Hill, Va. (years of practice); aged 83; died, April 8, of senility.

Correspondence

"MOVEMENT OF DIAPHRAGM WITH PATIENT IN LATERAL POSTURE"

To the Editor:—In THE JOURNAL, April 19, appears a paper on this subject by Dr. Tasker Howard. It is probable that the author failed to study the movement of the diaphragm on the recumbent side in a sufficient number of cases, and the studies reported were probably not made when the subjects had been in the lateral position for a long time.

With Dr. J. A. Sevier, I have carefully studied the questions raised by Howard. In a paper, "The Diaphragmatic Excursion and Mediastinum in Lateral Recumbent Posture," by Drs. Gerald B. Webb and J. A. Sevier (*Tr. A. Am. Phys.*, 1923; *Am. Rev. Tuberc.*, March, 1924) the following conclusions were reached:

1. In all subjects studied, the heart and mediastinum become displaced toward the chest wall of the dependent side.

2. In most subjects—but not in all—the diaphragm on the dependent side at first increases its excursion. In all cases this diaphragm, forced up by the abdominal viscera, holds a relatively higher position than that of the upper half.

3. The preliminary increase of diaphragm excursion on the dependent side is associated with an increase in the vesicular murmur at the base on that side.

4. At the end of from thirty to sixty minutes, the increase in diaphragm excursion and intensity of basal breath sounds have subsided. The diaphragm movement of the two sides may be equal or reversed.

5. In general, the breath sounds at the apex are less audible on the recumbent side.

Dr. Howard's conclusions are correct for a majority of subjects, but only then for the first half hour or more of lateral posture.

In an article entitled "Postural Rest for Pulmonary Tuberculosis" (THE JOURNAL, March 26, 1921, p. 846) are reproductions of roentgenograms illustrating a decrease of radiopacity in the recumbent lung after one hour, which is in contrast to the illustration presented by Dr. Howard.

Correct and careful observations are important in connection with our work on postural rest in pulmonary tuberculosis.

It is a pleasure to read Dr. Howard's paper and to learn of his interest in such studies, and we shall be grateful to learn whether he has made observations over a more extended time in the lateral posture.

GERALD B. WEBB, M.D., Colorado Springs, Colo.

A POSSIBLE SOURCE OF HAND CONTAMINATION

To the Editor:—May I suggest, as one interested in hygiene, that you consider the possible advantages in having fixtures in toilet rooms so made as to allow of their operation by the foot instead of the hand? The possibilities of getting infectious material on the hand and then on a fixture-handle are so obvious that it would seem that manufacturers might be interested in making their fixtures more sanitary if the subject could be called to their attention.

FRANCIS RAMALEY, Boulder, Colo.
Professor of Biology, University of Colorado.

Disease Migration.—All human diseases that were capable of migrating from their original habitat have done so. Those that have not spread have been tied to definite factors, such as special intermediate hosts or vectors.—Theobald Smith.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LIPOSAN

To the Editor:—What information have you concerning "Liposan," a preparation for intravenous use, which is made under the supervision of Dr. W. W. Bennett of Fort Wayne, Ind., and is represented to be a solution of chaulmoogra oil? The small amount of literature accompanying the preparation gives a list of diseases for which it is recommended, listed alphabetically, beginning with abscess and ending with varicosities. This list includes cancer, salt rheum, tuberculosis and ivy poisoning, but it does seem passing strange that leprosy, the only disease for which chaulmoogra oil *is* beneficial, is not included in the list. This product is being marketed by Hoffman & Hicks, P. O. Box 533, Columbus, Ohio, and from their reports they are doing a wonderful business with the physicians of central Ohio. In fact, according to their statements, there are no physicians who are not "back numbers" who are not using it, and these same "back numbers," I among them, are needlessly sacrificing thousands of human lives annually. This is a most terrible accusation and a load too great for me to bear, so I am unburdening myself to you.

FRANK C. WRIGHT, M.D., Grove City, Ohio.

ANSWER.—According to the advertising, Liposan is "a Vegetable Lipoidal Solution" which has chaulmoogra oil as its "medicinal element." Liposan is claimed to be "indicated" in "Abscesses," "Acne," "Anaemia," "Arthritis," "Agitans," "Boils," "Bubo," "Cancer," "Chorea," "Cystitis," "Eczema," "Erysipelas," "Furuncles," "Herpes," "Hemiplegia," "Ivy Poisoning," "Myalgia," "Neuralgia," "Neuritis," "Peritonitus," "Pyorrhoea," "Infantile Paralysis," "Pneumonia," "Rheumatism," "Synovitis," "Syphilis," "Salt Rheum," "Tubercle," "Tonsillitis," "Ulcerations (Indolent)," "Varicosities." Hoffman and Hicks have not requested an examination of Liposan by the Council on Pharmacy and Chemistry, and so far the A. M. A. Chemical Laboratory has not examined the product. Our correspondent was justified in his refusal to accept the unproved claims of a manufacturer; on the contrary, he might be justly criticized were he to administer intravenously a product which, so far as he knows, is unstandardized and of wholly questionable value.

RADIUM TUBES

To the Editor:—I wish to know whether radium tubes lose their potency by age or long use. If so, what changes take place, and how long will they remain potent?

F. H. M., M.D., Princeton, Ind.

ANSWER.—Radium is commonly supplied in the form of radium salts, such as radium chlorid or radium bromid, enclosed in containers. Also tubes containing radium emanation are available.

Salts of radium disintegrate by the emission of various rays. The rate of disintegration of radium salts is very slow, 1,780 years being required for the compounds to lose half of their initial activity. For practical purposes, therefore, radium salts may be considered permanent.

The emanation loses about 0.75 per cent. of its activity each hour, and consequently, its activity is practically gone after one month.

TREATMENT OF ALOPECIA

To the Editor:—Has roentgen-ray treatment of alopecia proved successful? If so, please give average dose, size of filter, and length of treatment. Is ultraviolet treatment of any service in this disease?

V. R. S., M.D.

ANSWER.—Roentgen-ray treatment has not been successful in alopecia. Ultraviolet treatment may be of some service, but certainly very little.

TRANSFERS OF PERMITS TO PRESCRIBE LIQUOR

To the Editor:—On moving from one state to another, is it permissible to use the same permit number and prescription blanks for spirituous liquors as in the state in which issued, or is it necessary to return the blanks and notify the director of each state?

J. A. MERIWETHER, M.D., Holcomb Rock, Va.

ANSWER.—A physician holding a permit to prescribe liquor, and moving from the state in which that permit was issued to another state, should surrender his permit and prescription blanks and obtain new ones. The outstanding permit and prescription blanks should be returned by registered mail to the prohibition director by whom they were issued, with a written request for their cancellation and for a letter addressed to the prohibition director in the state to which the permittee is moving, certifying that they had been canceled. This letter should be filed with the prohibition director to whom it is addressed, when application is made for a permit in the new jurisdiction.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 13-14. Sec., Dr. J. W. Walker, Fayetteville.

DELAWARE: Wilmington, June 17. Sec., Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Ocala, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Building, Tampa.

GEORGIA: Atlanta and Augusta, June 4-6, 1924. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, May 29-31. Sec., Dr. Rodney P. Fagen, Capitol Building, Des Moines.

KANSAS: Topeka, June 17. Sec., Dr. A. S. Ross, Sabetha.

KENTUCKY: Louisville, June 9, 1924. Sec., Dr. A. T. McCormack, 532 W. Main Street, Louisville.

LOUISIANA: New Orleans, June 12-14, 1924. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MARYLAND: Baltimore, June 17-20. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore; Sec., Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.

MASSACHUSETTS: Boston, May 13-15. Sec., Dr. Charles E. Prior, 144 State House, Boston.

MICHIGAN: Ann Arbor, June 10-12, 1924. Sec., Dr. B. D. Harison, 707 Stroh Bldg., Detroit.

NEBRASKA: Lincoln, June 18-20. Supt., Dr. J. D. Case, Terminal Building, Lincoln.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Alexander MacAlister, State House, Trenton.

OHIO: Columbus, June 3-6, 1924. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

TENNESSEE: Memphis, June 13-14, 1924. Sec., Dr A. B. De Loach, 434 Madison Ave. Bldg., Memphis.

TEXAS: Austin, June 17-19. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Building, Dallas.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 720 Anchor Building, Roanoke.

WYOMING: Casper, June 5-11, 1924. Sec., Dr. J. D. Shingle, Citizens Bank Bldg., Cheyenne.

Oklahoma January Examination

Dr. J. M. Byrum, secretary, Oklahoma State Board of Medical Examiners, reports the written examination, held at Oklahoma City, Jan. 8-9, 1924. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Nine candidates were licensed by reciprocity, and 2 candidates were granted reregistration licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Oklahoma School of Medicine		(1922)	*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University School of Medicine		(1912)	Texas
Atlanta College of Physicians and Surgeons		(1902)	Georgia
Atlanta School of Medicine		(1908)	Georgia
University of Louisville Medical Department		(1897)	Kentucky
St. Louis College of Physicians and Surgeons		(1899)	Missouri
Washington University Medical School		(1920)	Missouri
Ohio State University College of Medicine		(1910)	Ohio
University of Oklahoma School of Medicine		(1922)	Missouri
University of Texas Department of Medicine		(1922)	Texas

* No grade given.

West Virginia January Examination

Dr. W. T. Henshaw, secretary, West Virginia Public Health Council, reports the oral, written and practical examination, held at Charleston, Jan. 22, 1924. The examination covered 11 subjects and included 110 questions. An average of 80 per cent. was required to pass. Of the 10 candidates examined, 9 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Ohio State University College of Medicine		(1923)	88.4
Jefferson Medical College of Philadelphia		(1923, 2)	88.4, 88.8
Meharry Medical College		(1923)	80
University of Vermont College of Medicine		(1922)	88.8
Medical College of Virginia		(1922) 89.6, (1923, 2)	86, 87.2
University of Naples, Italy		(1922)	81.4

College	FAILED	Year Grad.	Per Cent.
National University of Athens, Greece		(1909)*	54.1

* Graduation not verified.

Book Notices

LA CIRCULATION RÉTINIENNE, a l'état normal et pathologique. Par le Dr. P. Bailliart. Avec une préface de M. le Pr. H. Vaquez. Paper. Price, 25 francs net. Pp. 403, with 57 illustrations. Paris: Gaston Doin, 1923.

Bailliart has produced a monograph on the retinal circulation that embraces all our knowledge of the subject to date. In the course of a few years, it may have to be rewritten because of the added information gained by the use of red-free light for ophthalmoscopy and by the microscopy of the fundus with the Koeppe contact-glass and the Gullstrand slit lamp. Neither of these methods is more than mentioned, and it is evident that the author has not availed himself of their valuable aid. The first section of the book is devoted to the anatomy and physiology of the retinal circulation, with great stress laid on the study of local vascular pressure by the Bailliart technic. This is well written, although not as logically consecutive as might be desired. It is believed that the pressure within the retinal arteries varies from 30 to 35 for the minimum to from 65 to 70 for the maximum normal. The venous pressure is approximately that of the intra-ocular tension, while the capillary is estimated at about 30 mm. of mercury. The relation of the retinal arterial tension to that of the humeral arterial tension is in about the proportion of 45 to 100. The second section deals with functional derangements of the retinal circulation, particularly local arterial hypertension and its consequences. The last and least original part has to do with lesions of the retinal vessels in various pathologic conditions. This is almost purely a clinical section, based on a careful survey of the literature and a limited number of cases. The entire book is well worth a careful study, but every page of the first section is conducive to serious thought. The language is simple and easily understood, even by an indifferent French scholar.

IRRTÜMER DER ALLGEMEINEN DIAGNOSTIK UND THERAPIE SOWIE DEREN VERHÜTUNG. Herausgegeben von Prof. Dr. J. Schwalbe, Geh. San.-Rat. Three volumes. Paper. Price, $1.52 each. Pp. 329, with 30 illustrations. Leipsic: Georg Thieme, 1923.

That this collection of essays on general diagnostic and therapeutic errors is well worth perusal by advanced students and practitioners of medicine is perhaps best shown by the list of topics treated and the names of the contributors. General pharmacotherapy is discussed by Emil Starkenstein, immunodiagnosis and immunotherapy by H. Selter. Dietotherapy in general is treated by H. Strauss, and pediatric dietetics by A. Schlossman; electrotherapy by L. Mann; hydrotherapy by A. Strasser; mechanotherapy by G. Hohman; balneotherapy by K. Zörkendörfer, and climatotherapy by M. van Oordt. Psychotherapy is covered by T. N. Schultz; general diagnosis, by Richard Koch, H. Schlesinger and L. Pincussen.

MANAGEMENT OF THE SICK INFANT. By Langley Porter, B.S., M.D., M.R.C.S., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., Assistant in Pediatrics and Chief of Outpatient Department, University of California Medical School. Second Edition. Cloth. Price, $8.50. Pp. 659, with 54 illustrations. St. Louis: C. V. Mosby Company, 1924.

In this edition the authors again limit the scope of their work to the needs of the sick infant. They have rewritten a considerable part of the book and thereby improved the work without more than a moderate increase in size. The book is in three parts. The first part, which is divided into ten chapters, discusses the most important symptoms encountered, including their treatment, as vomiting, diarrhea, constipation, hemorrhage, fever, cough, pain and tenderness, convulsions and syncopes. In this section the most common nutritional disturbances and their management are reviewed. The second part, in ten chapters, covers the more frequent malformations, infections and other disturbances of the respiratory and digestive tracts, the diseases of the heart and circulation, and those of the blood and the lymphatic, nervous, genito-urinary and osseous systems. The final chapters are devoted to the diseases of the skin, the glands of internal secretion, and chronic and acute infections. The general and specific measures indicated in their care are described in detail. In the third part, the application of the special therapeutic measures previously recommended is described in great detail, such as intravenous, subcutaneous, intramuscular and intraperitoneal injections, intraspinal serum injection, gavage, rectal feeding and heliotherapy. This part of the book also covers the description and indications for use of important and established measures for diagnosis of the diseases of infancy, such as determination of coagulation time, lumbar and ventricular puncture and puncture of the cisterna magna, the Schick test, fluoroscopy, and the taking and interpretation of roentgenograms. The last chapters are devoted to drugs, specific therapy and the treatment of acute poisoning. The work throughout is arranged so that it has a very practical value.

INDUSTRIAL HEALTH. Edited by George M. Kober, M.D., LL.D., and Emery R. Hayhurst, A.M., M.D., Ph.D. Cloth. Price, $15. Pp. 1184, with 51 illustrations. Philadelphia: P. Blakiston's Son & Co., 1924.

Some years ago there appeared a book by Kober and Hansen, entitled "Diseases of Occupation and Vocational Hygiene." It was the intention of the editors of the present volume to issue a revised edition of this work. The subject has advanced so rapidly, however, and so many physicians have undertaken industrial medicine as a specialty, that the present volume is almost a new work rather than a revision of the former one. In addition to the editors, thirty-three contributors, specialists in various industrial medical fields, have taken part in its preparation. The volume, which is almost encyclopedic, is divided into five parts, covering the general principles of maintaining health in industry, vocational hygiene of certain industries, specific occupational diseases, systemic occupational diseases and the principles of industrial health administration. To this, Dr. Kober has prefaced an historical review of the subject—a history that is relatively new, since industrial medicine as a specialty is hardly more than 50 years old. There were, of course, laws passed several hundred years ago to protect workers in various fields, but this was in no sense a systematic attack on occupational diseases. The present volume shows how greatly the field has grown. It involves a knowledge of virtually every phase of medical science, in addition to a special knowledge of certain conditions. The book is exceedingly practical, including, in small type, full directions for tests, laboratory data and extensive bibliographies. Two excellent indexes make ready reference to any subject a simple matter. Any one concerned with factory and industrial problems will find the volume, once used, a necessity.

TEETH, DIET AND HEALTH. By Kurt H. Thoma, D.M.D., Assistant Professor of Oral Pathology, Harvard University Dental School. Cloth. Price, $2. Pp. 226, with 44 illustrations. New York: The Century Company, 1923.

This book is a popular treatise on mouth hygiene and diet in relation to the formation and maintenance of the dental structures. It emphasizes the importance of the teeth in relation to health, and cites the most important items in the development of the lower half of the face. Various civilizations are reviewed to show that the more primitive races have generally had less dental caries because, in the main, of plainer food, more simply cooked. The author states that the teeth of the Romans of the Christian era decayed badly because of the elaborate food preparations, much the same as today, while the African negroes, American Indians, the Maori of New Zealand and the Eskimos were practically free from dental decay until touched by civilization. Several chapters are devoted to diet in relation to the teeth, with particular attention to the vitamins, based on the work of Dr. E. V. McCollum, Dr. Mellanby of England, and others. Regardless of the opinions that may be held of these diet studies in relation to general health, there is room for question as to their direct application to "maintenance" of tooth structure. Our best information at present indicates that the enamel of the tooth is a fixed structure, entirely passive; that it can be malformed only by a condition of malnutrition during the formative period—for the most part, this occurs before the sixth year—and that all subsequent changes are

due to external agencies. Studies of diet in relation to the saliva seem more likely to give information regarding decay of the teeth than studies of the effect of diet on the structure of the teeth. In general, the book is valuable in stressing the care of the mouth and the better selection of foods.

GENITO-URINARY DISEASES AND SYPHILIS. By Henry H. Morton, M.D., F.A.C.S., Professor of Genito-Urinary Diseases and Syphilis in the Long Island College Hospital. Fifth edition. Cloth. Price, $10. Pp. 712, with 366 illustrations. New York: Physicians and Surgeons Book Company, 1924.

If one does not object especially to the combination of genito-urinary diseases and syphilis in one book, then this one will probably find favor; still, it is questionable whether it is possible today, when the study of syphilis has virtually specialized itself, to deal adequately with that disease in about 130 pages. Furthermore, it would seem that far too many pages are devoted to the description of the technic of the Wassermann test, and too few to the diagnostic value of this reaction. In fact, it is dismissed rather curtly—as though the technic of the test were of more importance than its clinical value. On the other hand, the routine treatment of syphilis is discussed well. The discussion on the use of mercury is good. And, the author still speaks of "salvarsan" instead of arsphenamin; "carbolic acid" instead of phenol; "tied in" catheter instead of indwelling catheter; "bichlorid" instead of mercuric chlorid; "bromid of sodium" instead of sodium bromid; in fact, there is much evidence throughout the book of lack of uniformity, especially with regard to terms. This also appears in the arrangement of the topics. For instance: The anatomy of the urethra is followed by the diseases of the penis, urethritis, diseases of the prostate and seminal vesicles, and then stricture of the urethra. However, these are really only minor points, which strike the eye more forcibly, perhaps, than their importance warrants. The discussion of the various methods of examination and the use and care of instruments used in this specialty is good, although only two kidney function tests are mentioned. The chapters devoted to gonorrhea are comprehensive and a good guide to the treatment of this infection. The chapters on bladder tumors are in accord with modern views. It is noteworthy that the author gives credit freely to other authors, and he is not sparing in the use of pictures. The book is well illustrated; paper and type make reading an easy task.

NUTRITION: THE CHEMISTRY OF LIFE. By Lafayette B. Mendel, Sterling Professor of Physiological Chemistry, Yale University. Cloth. Price, $3. Pp. 150, with illustrations. New Haven: Yale University Press, 1923.

The first chapter is in many respects the most interesting and most stimulating part of the book. The science of nutrition is in a state of flux; old ideas are rapidly discarded for new ones, which soon are found to be merely a new dress for even older ideas, or are discarded because they, too, become antiquated. The only corrective that can help obtain a balanced point of view is knowledge of the history of the subject. Mendel's retrospect is painted in clean colors, charmingly assembled to form an unusually interesting moving picture of the development of the science of nutrition from Hippocrates to modern times. Three succeeding chapters are devoted to "the little things" in nutrition, vitamins and the protein factor, and are rendered particularly interesting because of the author's personal participation in the development of these subjects. The closing chapter deals with the energy problem, and closes with the words: "The science of nutrition is in the midst of a continual evolution of facts and development of truth. For the present, therefore, we should 'first get the facts.'" This book gives "the facts" to date.

ORAL HYGIENE. By J. Sim Wallace, D.Sc., M.D., L.D.S., Lecturer on Preventive Dentistry, King's College Hospital. Cloth. Price, 5 shillings net. Pp. 76. London: Baillière, Tindall & Cox, 1923.

This little book contains four papers. The first is devoted to the physiology of oral hygiene, in which the functions of mucus and saliva as cleansing agents are emphasized. The second chapter is devoted to vitamins and dental hypoplasia. In this the author takes issue with many writers who are in his judgment placing too much stress on the need of vitamins. He expresses the belief that no change occurs in the structure of the enamel after it is once formed. The third paper is on food in relation to the diseases of the teeth. Important consideration is given to the physical consistency of food in stimulating mastication. The author states that dental diseases may be prevented by the selection of foods, particularly for the termination of a meal, which leave the mouth with a cleanly feeling; this applies to fruit acids, especially. The fourth paper is on the progress of preventive dentistry, and consists of a brief historical review of the development of knowledge of dental caries, and a further statement of the author's views on the selection of foods as a preventive of decay.

THE CARE OF THE BABY. A Manual for Mothers and Nurses Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M.D., Professor of Pediatrics in the University of Pennsylvania. Seventh edition. Cloth. Price, $2.50 net. Pp. 478, with 104 illustrations. Philadelphia: W. B. Saunders Company, 1924.

This book has passed through seven editions, testimony to its popularity as a safe book for mothers who need advice relative to the care of the baby during the first few years. It is written in simple language, embodying large amounts of data on many subjects. Unfortunately, the illustrations represent obsolete material, and may lead to confusion on the part of mothers, who are only too often guided by illustrations rather than by text. The author evidently recognizes this danger, since he calls attention in his preface to the fact that these illustrations are intended to represent "types merely." The book may be recommended with the hope that, in future editions, the author will endeavor to provide illustrations of more modern types of clothing and paraphernalia used in infant care.

MEDICAL AND VETERINARY ENTOMOLOGY. A textbook for Use in Schools and Colleges as Well as a Handbook for the Use of Physicians, Veterinarians and Public Health Officials. By William B. Herms, Professor of Parasitology in the University of California. Second edition. Cloth. Price, $5.50. Pp. 462, with 229 illustrations. New York: The Macmillan Company, 1923.

The first edition of this book appeared eight years ago. Since that date, material has been continually revised and worked over by its author for use in classes in the subject in the University of California. In the first five chapters, the author covers the history of the subject, the anatomy of insects and the manner in which they carry disease. The remaining fourteen chapters concern every type of insect involved in disease carrying, or in causing disease, with the anatomy, life history and prophylaxis against disease. The book is well illustrated with instructive pictures, many taken from the author's own practical work in insect extermination.

MEDICINE FOR NURSES AND OTHER PUBLIC HEALTH WORKERS. By George Howard Hoxie, A.M., M.D., F.A.C.P., Lecturer on Medicine at the Research Hospital. Cloth. Price, $2.50 net. Pp. 411, with 39 illustrations. Philadelphia: W. B. Saunders Company, 1924.

This book should meet the needs of the general nursing profession. It is interestingly written, brief but sufficiently complete to supply the nurse's requirements. Diseases are discussed so as to give a good general idea of the etiology, symptomatology, bacteriology and treatment. Stress is placed on the dangers and means of contagion and on symptomatic treatment. Because of its presentation of the origin of disease, the methods of transmission and the means of combating transmission, the book should be of particular value to those employed in public health work.

FIGHTING FOES TOO SMALL TO SEE. By Joseph McFarland, M.D., Sc.D., Professor of Pathology in the Medical Department of the University of Pennsylvania. Cloth. Price, $2.50 net. Pp. 309, with 64 illustrations. Philadelphia: F. A. Davis Company, 1924.

In this volume the author gives for public consumption a brief consideration of the bacteria, our methods of investigation, and our methods of control of bacterial diseases. The book is excellently illustrated, and written in a style easily understandable by the layman. Of particular interest are literary references from numerous works, giving first-hand accounts of epidemics and plagues. The volume may be recommended as a reference work for students of public health and also for general reading.

Miscellany

NONSPECIFIC IMMUNITY

Twelve years ago, Forssman (*Biochem. Ztschr.* **37**:78, 1911) found that extract of guinea-pig tissues injected into a rabbit caused its serum to become lytic for sheep erythrocytes and for guinea-pig cells other than its erythrocytes. This reaction, known as the Forssman reaction, has been shown to conform to the usual criteria of immune reactions, even though lacking species specificity. Thus, the guinea-pig tissues contain a true antigen, called the Forssman antigen, which generates antibodies in the rabbit, these, in turn, reacting with an identical antigenic substance in sheep corpuscles. The Forssman antibody, so far as tested, is similar to the ordinary antibodies, for it is present with them in the globulin fraction of serum, and gives the usual specific immune reactions. The antigenic substance, however, differs from the usual antigens in being heterophil (i. e., in lacking species specificity), and also in its chemical composition.

The Forssman antigen is soluble in alcohol and ether but not in water or acetone, so that it is of lipoid character and probably belongs in the phosphatid group. The lipins, being chemically simpler than the proteins, might differ little or none in various species, which would account for the presence of the same antigen in many of them. The actual distribution of this antigen among species, however, is rather enigmatic, for it is present in tissues of the guinea-pig, horse, mouse, dog, cat, fowl and tortoise, but not in their blood cells or plasma, and is present in the red cells but not in the tissues of the sheep and goat; whereas other species often closely related, as the rabbit, ox, rat, pig, pigeon, goose, frog, eel and man, do not possess the antigen at all but may have the antibody. Further, this substance probably contains, besides the lipoid element, a nonlipoid fraction (protein?) with which the antigenic property is especially identified. Taniguchi (*J. Path. & Bacteriol.* **24**:122, 217, 241, 256, 1921) has shown that lipoid emulsions act as the specific antigen with Forssman antibodies and give in vitro typical precipitin, amboceptor fixation, and complement fixation tests, and even in vivo cause anaphylactic shock, an antigen-antibody reaction; but that pure lipoids never themselves generate the Forssman antibodies.

It seems, then, that though the specificity of immune reactions does rest on a chemical basis, we must revise our understanding of species specificity and enlarge the list of substances known to possess immune properties. The new facts have with profit been focused on clinical problems.

Anaphylactic shock from interaction in vivo of the Forssman antigen and antibody has been shown by Amalco (*Ztschr. f. Immunitätsforsch.* **22**, 1914) to follow the injection of Forssman antibody into animals whose tissues contain the antigen, or of antigen into animals whose blood contains the antibody. The antibody is present in widely varying amounts in human beings, and Iijima (*Sc. Rep.*, Govt. Inst. Infect. Dis., Tokyo Imp. Univ. **1**:87, 1922) has shown that *B. dysenteriae* (Shiga) contains Forssman antigen. He believes that the pathogenicity of this organism is due in part to this antigen, and that susceptibility varies directly with the heterophil antibody content of the blood. Other organisms which he studied—*Spirillum cholerae, B. typhosus, B. paratyphosus* B and Gaertner's bacillus—were devoid of the antigen.

Taniguchi (*ibid.* **1**:97, 1922) presents much evidence for his belief that the Wassermann reaction of syphilitic serums is directly due to an increased amount of Forssman antibody. The Wassermann antigen is prepared in the same manner as the Forssman antigen, and the two have the same lipoidal solubilities; the spirochete itself is a poor antigen, and organisms not related to syphilis are able to cause the Wassermann reaction to become positive; all of which is not compatible with a specific protein antigen, but does suggest a lipoid one. These facts have induced many workers to discard an immunologic explanation of the Wassermann reaction. Sachs and others believe the syphilitic serum globulin is changed in its degree of dispersion so that it is precipitated by organ extracts, and that the precipitate absorbs the complement—a mechanism that would account for the Sachs-Georgi as well as for the Wassermann test. Taniguchi has found, however, that the precipitates in these tests are mostly lipoid and may be protein-free, so that the globulin per se is not precipitated.

On the other hand, syphilitic serum reacts with the Forssman antigen exactly as does serum containing the Forssman antibody. The Wassermann reaction and Forssman antigen-antibody reaction are in all respects similar, even in the manner in which they are modified by changes in temperature, salt content, and cholesterol addition. And, finally, the serum of rabbits injected with Forssman antigen gives positive Wassermann and Sachs-Georgi reactions in intensities that parallel accurately the titer of Forssman antibody.

How the syphilitic infection brings about an increase in the Forssman antibody remains to be shown; possibly the antigenic lipoid-protein is liberated during destruction of tissue by the spirochetes.

THE CONVICTION OF THE CHIROPRACTOR

One of the most healthful signs of increasing intelligence on the part of the public in the matters of treatment of disease by cultists and quacks was the conviction in New York City of Ernest G. H. Meyer and the subsequent comments of newspapers of importance on the decision. Typical of most of the comments was the following statement from the New York *Times* of April 10:

"Ernest G. H. Meyer, one of the too many men who, without a medical education, have engaged in the practice of medicine, was convicted of manslaughter in a Brooklyn court this week and may receive a maximum sentence of from ten to twenty years in jail. As the jury recommended clemency, it is not likely that his punishment will be severe, but the conviction will stand as a precedent and shows that convictions can be obtained in spite of that absence of intention to do harm which always counts so heavily with jurors—and with judges, too, for that matter.

"Meyer, who calls himself a 'chiropractor,' was summoned by misguided parents to treat a sick child. He performed some of the spinal manipulations which constitute the whole stock in trade of his class. Whatever the result of his exertions may have been, he did not discover that the child was suffering from diphtheria, a disease which almost any sane adult ought at least to suspect before it is far advanced, and a real doctor was not called in until just before the fatal termination. Then there was administered the anti-toxin which in all probability would have saved the child's life if resort to it had been timely, but it was too late and the little girl died, a victim of a double ignorance. This to the jurors was manslaughter.

"One comment on the verdict heard in the court room was that if it is to stand, any 'chiropactor' unlucky enough to lose a patient can be sent to jail. The statement will excite neither dissatisfaction nor apprehension among people fairly well informed as to the preparation necessary for the practice of medicine and who have sense enough to know that there is more in it than surgery and the giving of drugs, to which all the 'irregulars'—euphemism for 'quacks'—desperately try to confine its definition."

April 17, the *Times* reaffirmed the position taken by THE JOURNAL as to the equal culpability of the parents in this case:

"As the sentencing of Ernest G. H. Meyer, the chiropractor who was convicted of manslaughter in connection with the death of a child suffering from diphtheria, received only brief mention in the papers, it is desirable that the importance of the case should receive more of the publicity necessary to bring it to public attention.

"Meyer goes to Sing Sing for not less than a year and not more than two years. The punishment is not severe, considering the enormity of his pretensions to treat all diseases and the frequency with which the ignorant are deluded by the claims of charlatans of his class. It is severe enough,

however, to give thought to those who are tempted to put their own lives and those of their children at the mercy of men with worse than no knowledge of medicine and yet practicing it.

"It was a great achievement to establish the fact that quackery can be punished, in spite of the absence of definite ill intention. Parents who subject their helpless children to the ministrations of doctors who are not doctors have not yet been held to due and like responsibility. That may come in time. Then men like Meyer will not go to prison alone."

COAL MINE ACCIDENTS

The operators of 200 coal mines cooperated with the Bureau of Mines of the Department of the Interior in a study of more than 3,000 coal mine accidents. The bureau found that about 2 per cent. of coal mine accidents result fatally; less than 5 per cent. result in death, permanent total disability or permanent partial disability, while 95 per cent. result in temporary disabilities. The average mine accident resulting in temporary disability means a loss of production of about 60 tons of coal, and a time loss to the worker of fifteen days. With the daily output of coal per man figured at 4 tons, and with coal valued at $3.25 a ton at the mine, the average value of lost tonnage for each accident resulting in temporary disability is $195. There are about 200,000 nonfatal injuries a year in coal mines in the United States, and they represent a total coal tonnage loss valued at about $39,000,000. The time and monetary loss per accident would, of course, be increased if accidents resulting in death and permanent disability were included in this tabulation.

Mine explosions and fires were found to be responsible for 0.3 per cent. of all temporary injuries and slightly less than that percentage of all time lost. The average time loss from this cause is twelve days per man injured. Mine haulage was found to be responsible for 28 per cent. of all temporary injuries and 30 per cent. of all time lost. The average time loss from this cause is nineteen days per man injured. Falls of the roof and the side in bituminous mines are responsible for 29 per cent. of all temporary injuries and 35 per cent. of all time lost by underground workers. Injuries from this cause average twenty-one days loss of time per man injured.

Medicolegal

Mental Sufficiency for Transaction of Business—Definitions

(Johnson v. Millard et al. (Neb.), 195 N. W. R. 485)

The Supreme Court of Nebraska, in affirming a judgment sustaining the validity of conveyances made in 1903 and 1906 by a man advanced in years who had been adjudged insane in 1900, says that all the physicians testifying seemed to think that he was insane in 1900 and that he was suffering from paranoia. There was insanity in the family. His letters indicated an abnormal mentality. Paranoia may be defined as mental unsoundness of a chronic character. It is progressive in character. In the early stages of this disease, and before it has progressed to so aggravated a form, a patient is much better at times than at other times. In other words, the patient has lucid intervals when he is capable of transacting business. The records in this case were searched in vain for any witness who had business transactions with this grantor in the years 1903 to 1906 who noticed he was not competent to transact his business. If, then, the conclusions of the physicians be accepted as final, still the defendant had shown that he was capable of transacting his business at the dates of the two conveyances in question. Mere imbecility or weakness of mind, however great, is not insanity. There must be a total want of understanding. The question in all cases is not whether a person's mind in impaired, nor whether he is afflicted by any form of insanity, but whether the powers of his mind have been so affected by his disease as to render him incapable of transacting business like the business in question at the time of the transaction. Conceding all the physicians said, this grantor was suffering from paranoia or mental unsoundness with delusions. This alone would not render his conveyances void. It has been held that paranoia is "monomania." A conveyance is valid, then, if the delusion exists only with reference to an extraneous matter, so that it cannot be reasonably supposed to have influenced the grantor in making the conveyances. In short, in an action in equity to set aside conveyances of real estate because of the alleged insanity of the grantor, the question is not whether the grantor's mind was impaired, nor whether he was afflicted with some form of insanity, but whether the powers of his mind had been so affected by his disease as to have rendered him incapable of knowing and appreciating his property and what disposition he wished to make of it at the time he conveyed it.

Need Not Submit to Operation to Correct Bad Union of Fractured Femur

(Fred Cantrell Co. v. Goosie (Tenn.), 255 S. W. R. 360)

The Supreme Court of Tennessee, in affirming a judgment dismissing the company's petition to be relieved from the payment of further compensation under the workmen's compensation act, says that the evidence showed that the defendant sustained a fracture of the femur of his left leg by falling from a ladder while in the employ of the petitioner. There was a bad union of the fractured bone, in consequence of which the defendant was unable to walk without the use of crutches. The petitioner contended that this condition could be remedied by an operation, the expense of which it offered to defray, and that the refusal of the defendant to undergo the operation was so unreasonable that the payment of further compensation to him should be ordered stopped. But the circuit judge found that the defendant had not unreasonably refused to submit to an operation in an effort to have his condition corrected, and the supreme court thinks that there was evidence to support that finding. The evidence showed that an operation, such as the petitioner insisted that the defendant should undergo, was a serious one, and would produce much pain and suffering, and would involve an appreciable risk of life. It has been repeatedly held that the refusal of an employee to submit to an operation cannot be said to be unreasonable when it appears that a risk of life is involved. The supreme court thinks that a reasonable construction should be given to the Tennessee statute. It does not think it should be required that the injured employee should submit to a serious operation involving an appreciable risk of life in order that the pecuniary obligation created by the law in his favor against his employer may be minimized. This rule appears to be supported by the great weight of authority, and is reasonable and works no injustice on the employer. If, however, it were otherwise, serious consequences would befall the employee in many cases.

Judicial Notice Not Taken of Duration and Prognosis of Angina Pectoris

(Foss v. Mutual Life Ins. Co. of New York (Mass.), 141 N. E. R. 498)

The Supreme Judicial Court of Massachusetts, in overruling exceptions to verdicts for the plaintiffs on policies of life insurance in a case in which the insured died two and a half months after the delivery of the policies, which aggregated the sum of $15,000, says that a motion for a directed verdict for the defendant company was rightly refused. The evidence was conflicting whether the insured had angina pectoris when he made application, when the policies were issued, or when he died. Assuming that he died in an attack of angina pectoris, the court could not take judicial notice when the disease began, or that that disease is so grave in its nature that it is generally recognized as having a tendency to shorten life and so, as matter of law, to create a condition of mind or body that increased the risk. In determining whether the insured had angina pectoris when the applications for insurance were made, and whether if he did have it the risk was increased, the jury had to consider and weigh all the testimony as to the nature of the disease and whether its character was such as to increase the risk.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Chicago, June 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., May 26-28. Dr. Henry G. Bugbee, 40 East 41st St., New York, Sec'y.

American Dermatological Association, Minneapolis, Minn., June 5-7. Dr. Udo J. Wile, 211 East Huron Street, Ann Arbor, Mich., Secretary.

American Gastro-Enterological Association, Atlantic City, May 5-6. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Gynecological Society, Hot Springs, Va., May 15-17. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Swampscott, Mass., June 2-4. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, May 29-31. Dr. W. H. Haskin, 40 East 41st Street, New York, Sec'y.

American Neurological Association, Philadelphia, June 5-7. Dr. Frederick Tilney, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Hot Springs, Virginia, May 26-28. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Orthopedic Association, Baltimore, May 15-17. Dr. De Forrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Otological Society, Swampscott, Mass., June 3-5. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.

American Pediatric Society, Pittsfield, Mass., June 5-7. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Physiologic Society, New York, June 23-25. Dr. Joseph F. Montague, 540 Park Avenue, New York, Secretary.

American Psychiatric Association, Atlantic City, June 3-6. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y., Secretary.

American Radium Society, Chicago, June 9-10. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.

American Society of Clinical Pathologists, Rochester, Minn., June 5-7. Dr. Ward Burdick, 652 Metropolitan Building, Denver, Secretary.

American Society of Tropical Medicine, Chicago, June 9-10. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.

American Urological Association, Atlantic City, June 3-5. Dr. Homer G. Hamer, 723 Hume-Mansur Building, Indianapolis, Secretary.

Arkansas Medical Society, Fayetteville, May 20-22. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Associated Anesthetists of the United States and Canada, Chicago, June 9-10. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

California Medical Association, Los Angeles, May 12-15. Dr. Emma W. Pope, Balboa Building, San Francisco, Secretary.

Connecticut State Medical Society, Hartford, May 28-29. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Association of, Augusta, May 9-11. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Illinois State Medical Society, Springfield, May 6-8. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Des Moines, May 7-9. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Wichita, May 7-8. Dr. J. F. Hassig, 804 Elks Building, Kansas City, Secretary.

Maine Medical Association, Portland, June 25-27. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Boston, June 6-7. Dr. W. L. Burrage, 182 Walnut St., Brookline, Secretary.

Medical Library Association, Chicago, June 9-10. Dr. John Ruhräh, 11 East Chase St., Baltimore, Secretary.

Medical Women's National Association, Chicago, June 9-10. Dr. M. J. Potter, First National Bank Building, San Diego, Calif., Secretary.

Mississippi State Medical Association, Jackson, May 13-15. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Springfield, May 6-8. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

National Tuberculosis Association, Atlanta, Ga., May 7-10. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

Nebraska State Medical Association, Omaha, May 13-15. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, June 24-25. Dr. D. E. Sullivan, 7 N. State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 5-7. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.

New Mexico Medical Society, Santa Fe, May 27-29. Dr. Charles M. Yater, Roswell, Secretary.

Ohio State Medical Association, Cleveland, May 13-15. Mr. Don K. Martin, 131 East State Street, Columbus, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 13-15. Dr. C. A. Thompson, 508 Commercial Nat'l Bank Bldg., Muskogee, Sec'y.

Pacific Northwest Medical Association, Vancouver, B. C., June 26-28. Dr. F. Epplen, 422 Paulsen Building, Spokane, Wash., Secretary.

Radiological Society of North America, Chicago, June 6-7. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Rhode Island Medical Society, Providence, June 5. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.

Southern Minnesota Medical Association, Mankato, May 19. Dr. H. T. McGuigan, Redwing, Secretary.

Utah State Medical Association, Logan, June 19-21. Dr. William L. Rich, Boston Building, Salt Lake City, Secretary.

Wyoming State Medical Society, Cody, June 17-19. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Meeting of the Section on Surgery, held April 22, 1924

Fracture of the Skull

DR. GEORGE J. HEUER, Cincinnati: In a series of 223 cases of fracture of the skull, fifty-two patients were moribund on admission, and, in spite of any measure resorted to, died; fifty-three were subjected to operation, either for the relief of marked pressure symptoms, or because of simple or compound depressed and comminuted fractures. Of these, twenty-two died. One hundred and twenty-one patients were less seriously injured, and were treated either expectantly or by repeated lumbar puncture. Of these, six died. The total mortality in the entire series was 35.8 per cent. The incidence of skull fracture has greatly increased, chiefly because of the automobile. The seriousness of skull fracture has increased. No advances in the treatment of the desperately injured have been made. Some advances in diagnosis and treatment in the less severe cases of injury has been made. Lumbar puncture has undoubtedly reduced the number of cases subjected to operation. In the treatment of fractures of the skull, the following points should be considered: careful routine examinations, including lumbar puncture, with measurement of the spinal fluid pressure on patients admitted with possible skull fracture. In the case of the desperately injured entering the hospital in deep coma, the problem is almost hopeless; measures should be tried to bring the body temperature to normal, to ease the respiration and lessen the cyanosis by freeing the air passages and by oxygen, and to relieve pressure by lumbar puncture or decompression. If the less seriously injured show signs of marked increased intracranial pressure on admission, they may require an immediate or early decompression, to reduce the intracranial pressure to normal as quickly as possible; if the symptoms are not so urgent, repeated lumbar puncture with the same purpose in mind is advisable. Should the pressure symptoms increase in spite of this, a subsequent decompression may become necessary; one should not wait until the pressure symptoms become grave before instituting active surgical therapy. If operation becomes necessary, the subtemporal decompression, done on the side of the injury, is advocated; occasionally a bilateral decompression becomes necessary. In the treatment of the compound depressed or comminuted fractures, the points of importance are: the most meticulous revision of the wounds of the soft parts, bone, dura and cortex so as to restore the structures to as nearly normal as possible, and the avoidance of drainage, as this is the source of many postoperative evils.

DISCUSSION

DR. JAMES H. LEWIS, Buffalo: In fracture of the skull there is quite a difference of opinion among the surgeons as to the prognostic value of the symptoms and as to treatment. The condition of prime importance is intracranial tension. Lumbar puncture is the most important diagnostic guide. Dr. Heuer said nothing about the fundus examination. I think this is regarded as being of less importance today than formerly. Dilatation of the veins is an indication of pressure, but lumbar puncture is the most indicated procedure, and the most helpful one in relieving pressure.

DR. WILLIAM SHARPE, New York: I agree with Dr. Heuer that fractures of the skull have become more serious during the last few years. It is a remarkable fact that the automobile has damaged the patient much more seriously than was formerly the case with the injuries obtained from a fall or a blow. There is no doubt that brain injuries have increased in number within the last few years. The operative mortality from brain injuries in one hospital in New York from 1900 to 1910 was 87 per cent. The operative treatment of brain injuries was instituted in two periods, when no operation should be performed on those patients. The first period is that of initial shock, when any operation is merely an added shock to the patient. The second period when no operation should be performed, and which, unfortunately, still obtains, is during the terminal period of medullary edema. Frequently a patient who has been progressing apparently well

for four or five days enters a state of medullary edema, with falling pulse and respiration rate and falling blood pressure, and because, seemingly, the patient is going to die, operation is performed as a last resort, when, as a matter of fact, any operation in that period merely hastens death. The operative treatment of brain injuries has been most discredited by operations done during these two periods when no operation should be performed. Patients having a high intracranial pressure will die, whether it is due to hemorrhage or to cerebral edema. The use of magnesium sulphate in edema has not been satisfactory, in my experience. I have had some success with it in cases of chronic edema, or when it was associated with brain tumor; but in acute brain conditions I have not had any success with it. Lastly, as regards treatment, in a large series of these patients, only 31 per cent. required operation. More than two thirds of the patients make excellent recoveries without operation, and they are the cases in which the increased pressure is not so high, and who are treated expectantly, palliatively and by means of lumbar puncture.

DR. ARTHUR S. CHITTENDEN, Binghamton, N. Y.: It is difficult to perform a necropsy when any fixing agent has been used previously. Only a small amount of blood is found in the intracranial cavity in the cases in which the vertebral vessels have been perfused with solution of formaldehyd. In cases in which death occurred quickly, I have seen the hemorrhage well down around the medulla and pons. In these hopeless cases, cisternal puncture is of great value. Patients who have had a low temperature and were unconscious have been saved by this procedure. Lumbar puncture may be done once or twice, and the blood no longer flow. Cisternal puncture will cause a copious flow through the needle.

DR. GEORGE J. HEUER, Cincinnati: Although we have examined the fundi of the eyes systematically, we have been unable to find anything of value in the early acute cases. It is true that if a patient has had increased intracranial pressure for a number of years, sooner or later one will be able to see very definite changes in the fundi; but the amount of dilatation of the veins seen in the early cases does not convey any accurate idea of the degree of intracranial tension, nor is it a diagnostic sign of any value. We have used magnesium sulphate in quite a large number of cases. Remarkable results accrue occasionally in some cases for a short period of time. As a method of treatment, it does not give the same results that lumbar puncture does. Occasionally, in extradural hemorrhages, one finds a considerable amount of clot; but, generally speaking, not much blood is found at operation in these serious cases. A thin film of blood may be spread over the entire hemisphere, but it is not usually thick, so that the amount of blood actually within the intracranial space is not very large. I agree that cerebral edema is the important factor rather than the amount of hemorrhage. In some basilar fractures, in which the hemorrhage occurs about the medulla and pons, I have seen considerable hemorrhage, which has extended down to the end of the spine all along the cord; but even in the majority of these cases there is not a very great deal of hemorrhage. As regards puncture of the cistern, I have done this in a very few cases. As to the amount of fluid withdrawn, I have sometimes taken as much as 75 or even 100 c.c. Of course, the amount withdrawn varies; but when the cerebrospinal fluid is flowing freely, I have withdrawn as much as that. The frequency with which spinal puncture should be done depends on the symptoms present.

Nervous and Mental Diseases Following Head Injury

DR. DAVID E. HOAG, New York: A review of the literature shows that subjective symptoms are present in 80 per cent. of cases of head injuries; 8 per cent. show decidedly psychotic symptoms, while only 10 per cent. show no subjective complaint. The most prominent subjective complaints are headache and vertigo, continuing for a very long time after all evidence of injury has disappeared. Less common complaints are tremors, weakness, insomnia, nausea, cardiac palpitation, and inability to concentrate and to use memory as before, or to stand the stress and strain of exertion. Although there may be a certain number of genuine, legitimate cases of real definite head injury, the victim presenting a set of psychoneurotic complaints that are beyond his control, there are a far greater number of neuroses, so called, that are born and nurtured in the days following the accident.

DISCUSSION

DR. WILLIAM SHARPE, New York: Dr. Hoag has emphasized the fact that there is a great frequency of psychoneurotic conditions following cranial injuries, and I think that among the laity those who have had fractures of the skull are looked on as never being really normal again. There is a change of personality, either of the depressed type or of the irritable, excitable type. When we consider that gross brain lesions, lacerations, and change of substance of cerebral tissue are quite rare in brain injuries or fracture of the skull, we must ask what is the cause for this change of personality. In examining quite a large number of these patients, I have found a large percentage of cases of increased intracranial pressure of mild degree, representing a chronic cerebral edema. At Bellevue Hospital there was only one in sixteen patients who had a gross cerebral laceration. These patients, of course, all had died, and those who survived did not have as serious a brain injury as those who died. I tried to trace the patients who had had fractures of the skull and who had been discharged from four of the large hospitals in New York City from 1900 to 1910. I found only 34 per cent. of them; 68 per cent. were having difficulty, either headache, change of personality of a depressed or excitable condition, and a few had convulsive seizures. More than 50 per cent. of these patients had increased intracranial pressure, not over twice the normal, but definitely increased, and at operation on some of these patients no gross lesion was found, but along the supracortical veins in the sulci there was a whitish connective tissue residue, which caused a partial blockage of the absorption of the cerebrospinal fluid, producing the condition of wet brain. This condition of increased intracranial pressure should be borne in mind in differentiating the post-traumatic neuroses from the definite post-traumatic organic lesions many of these patients have. This prolonged increase of intracranial pressure and of edema is sufficient to produce these psychoneurotic changes in a certain percentage of these patients.

DR. EDWARD B. ANGELL, Rochester: My opinion in regard to these traumatic neuroses is that they start very largely as the result of suggestion. In an accident that has been severe enough so that unconsciousness follows, these patients seldom have manifestations of traumatic nervous troubles. In the lighter forms, when consciousness is not lost completely, more of these manifestations of trouble are seen. The emotion of fear is at the bottom of many of these cases, and it engenders apprehension. It may be that in some cases of severe shock there is a real trauma that is demonstrable only by the microscope, but in most cases there is no pathologic condition whatever. It is a mental disturbance engendered by apprehension and fear.

DR. DAVID E. HOAG, New York: I have been for a long time more or less of a skeptic regarding the psychoneurotic syndrome following injury, feeling that it is entirely suggestive.

Fracture of the Femur

DR. S. POTTER BARTLEY, New York: The method of treatment I have employed in about 150 cases allows use of the knee by active and passive movements from the beginning until the end of the treatment, without injury to the fracture or the soft parts; in fact, with advantage to both. It prevents months of sometimes useless efforts for the restoration of function after union is present in the fracture. In addition, active movements of muscles, electrical stimulation and unimpeded circulation are permitted during the period of treatment. The principles of treatment are immobilization by the method of suspension, traction and countertraction, suppressing all rigid fixation by plaster splints, etc. Fixation is produced automatically, for movement of the fractured limb is only possible in toto and cannot occur within the region of the fracture. Fixation is maintained by preventing the transmission of forces of movement. Care must be taken to offset the action of gravity by producing the normal ante-

rior curve of the femur by proper posterior or lateral pressure support. Efficient traction, applied as soon as possible after the injury, is the most important single factor in the success of this method. When the fracture occurs at or above the middle third of the femur, adhesive traction is used. If the fracture is below the middle third, the calipers are inserted. If the adhesive traction fails to give satisfactory reduction in three days, the caliper is again used for traction. In adult males, from 25 to 35 pounds is necessary with adhesive traction; with calipers, seldom more than 15 pounds is required to give satisfactory reduction of all shortening.

DISCUSSION

DR. JAMES H. LEWIS, Buffalo: After all, it is functional rather than anatomic results that we are looking for. The subtrochanteric fractures most often need open reduction. In spite of the pressure pads described by Dr. Bartley, I have not been able to control these fractures satisfactorily. I prefer the Steinman pin to the calipers. I have had no bad results with it. It is surprising that only four of these fractures are compound. My experience has shown a much higher percentage of compound fractures. Emphasis should be laid on prompt reduction of a fracture.

DR. HENRY C. COURTEN, New York: Dr. Bartley's paper has demonstrated the advisability of establishing a department of fractures in every hospital. At the Post-Graduate Hospital, a department of traumatic surgery has been established, and fracture cases are referred to that department. The type of treatment outlined by Dr. Bartley requires the most complete roentgen-ray and mechanical facilities. It requires also a staff of interns sufficiently large and sufficiently well trained, and of sufficient length of service so that they can be trained to carry out the methods of the man in charge.

DR. S. POTTER BARTLEY, New York: The point I especially wanted to bring out was the small number of bone operations with the little risk to the patient, and the low mortality. I feel that this is a superior method in the hands of the surgeons throughout the country. In private practice I should elect to operate on many femurs by open reduction. But that is not the point. This is a hospital service of ward cases in an institution of fair size, the idea being to standardize, if possible, a method to be used in general. As far as the Steinman pin is concerned, there is no question that it affords better control of the lower fragment; but must be inserted under anesthesia, and it is more dangerous than the caliper, even with the best of technic, because of the possibility of infection. The Steinman pin is also difficult to insert in low-lying fractures. For general use, I feel that the caliper is safer. I have never used calipers in children under 7. Adhesive plaster traction is applied only in fractures of the femur occurring above the middle third.

Fracture of the Upper End of the Humerus

DR. JAMES N. WORCESTER, New York: I plead for the treatment of fracture of the upper end of the humerus in the position of abduction and external rotation, and the use of the traction and suspension method to accomplish this. The method necessitates confinement to bed for twenty-eight days. From the theoretical standpoint, the one main consideration is that of bringing the lower controllable fragment into line with the upper uncontrollable one, by traction in the proper line, and at the same time keeping it in the same position of rotation. This necessitates a portable roentgen-ray apparatus to check up these factors. When this reduction has been accomplished, usually in the first forty-eight hours in cases of recent fracture, uncomplicated, it is possible to institute early motion in the shoulder joint as well as in the elbow joint. The application of heat and light massage may be started very early, and the atrophy of the deltoid, produced by the stretching of this muscle in the treatment of fractures of this region in an adducted position, is avoided. The traction used is usually 8 pounds, and is applied through adhesive straps placed on both sides of the arm, with the elbow flexed at right angles and the forearm suspended also by adhesive straps. The arm above the elbow is supported by a sling, balanced by weights, as is also the forearm. The after-results have been good almost without exception, even when anatomically perfect alinement has not been secured.

DISCUSSION

DR. CHARLES R. BORZILLERI, Buffalo: In two cases of fracture of the anatomic neck, we used the principle of rotation and abduction of the shaft, but employed a plaster-of-Paris bandage. The object of putting on the plaster was to secure absolute control of the shaft for traction.

DR. JAMES N. WORCESTER, New York: The only objection that I can see to using plaster of Paris is that it prevents the use of all the muscles.

(To be continued)

TENNESSEE STATE MEDICAL ASSOCIATION

Ninety-First Annual Meeting, Held at Knoxville, April 7-10, 1924

(Concluded from page 1390)

Inflation of the Fallopian Tubes with Carbon Dioxid Gas

DR. LUCIUS E. BURCH, Nashville: Inflation of the peritoneum by either the abdominal or the uterine route is perfectly safe, provided the contraindications are remembered. It is almost free of pain if the patient is kept in the knee-chest or Trendelenburg posture during the inflation and for fifteen minutes after it. It is of the greatest aid in obscure pelvic cases, and will make an accurate diagnosis possible. It is possible to diagnose with certainty pregnancy in the early weeks. The determination of the patency of the fallopian tubes should be the first step in studying cases of sterility. A certain number of women who are sterile and whose tubes have been found patent will conceive, following inflation.

The Medical Outlook

DR. H. L. FANCHER, Chattanooga: America at present has the honor and responsibility of being the center of learning of the medical world. How long will she remain the leader of medical thought? Why is there so little initiative and so great a discontent in the profession of Europe today? The influences in Europe a decade or so ago were very similar to what they are in this country today. Club, society, insurance, municipal, district, state and national propaganda began. Each influence having selfish motives, but patriotically or philanthropically disguised, crept into the professional life until there was no way for medicine to cope successfully with the "interests." The American College of Surgeons, the American Medical Association, the American College of Physicians, the state, sectional and county medical societies are seriously planning the best efforts to ward off, as long as possible, the fateful day when the profession in America will be fettered like our brothers in Europe. The government wants statistics at the expense of service. The big interests want control of us at the expense of our liberty. The free venereal clinics, started by the national government, fostered by the Red Cross and dumped onto the state, are probably doing no good to the public and making a fizzle at statistics. The Harrison Narcotic Law charges the honest physician for prescribing an opiate—and almost prevents him from doing it—but seems unable to check the dishonest one from commercializing the traffic. The Sheppard-Towner Act will put clerks and nurses in charge of the care of both mother and child, but they will never know how many abortions have been done. In a medical way the government has done a tremendous good to our people and to our profession in public health without coming in direct contact with the individual or interfering with the personal, private practice of the physician; but the three acts of the government mentioned above are long arms reaching into the body politic to disturb and eventually to change our time-honored system of free and independent efforts for the good of the patient. If law makers do not quit "restricting" and "regulating," we shall probably advise our sons to learn a trade. When a mind is subsidized there can be no honest, constructive thinking.

Peptic Ulcer

DR. C. J. CARMICHAEL, Knoxville: The fact that no single theory has been accepted by any large group of men is evidence that the cause is yet unproved. I venture the theory that a change in the chemistry of the blood, which may result from

a number of conditions, lessens or prevents the formation of an unknown antidigestant, thus permitting the gastric enzymes in presence of hyperacidity to digest the mucosa. A study of the chemistry of the blood in cases of ulcer would be helpful.

Surgical End-Results in Duodenal Ulcer

DRS. WILLIAM D. HAGGARD and W. O. FLOYD, Nashville: We are not unsympathetic with the soundness of the argument in reference to excision of duodenal ulcer. We believe that it will be more employed in the future in our hands as well as those who have employed it extensively. It is not going to be an elaborate removal of a large portion of the stomach with the duodenal ulcer as performed by the German school, and as exemplified by Finsterer, who operated in our clinic during his recent visit to America. Extensive resections will not be popular, nor do they seem essential. It is not to be gainsaid that the destruction of a small duodenal ulcer with a cautery when possible, or a knife excision when it is small enough not to interefere with pyloric emptying, is ideal. The majority of our cases have not presented the simpler and easier variety suitable for excision of the ulcer. Many of them have been of the large calloused variety. It is believed that, with increasing experience and ability to diagnose duodenal ulcer early, with corresponding earlier operation, a larger field for excision will exist than in the past, in which patients have not come for operation save as a result of a great period of disability and resulting pathologic changes of considerable magnitude. The mortality was due chiefly to mechanical defects, most of which occurred in the early period of our work and which we have been able to obviate by more perfected technic. The end-results seem to be fairly satisfactory, and mathematically confirm the impression, clinically arrived at, that well placed and well executed gastro-enterostomies in the average case of duodenal ulcer have been attended in our clinic with very gratifying results.

Surgical Treatment of Gastric and Duodenal Ulcers

DR. BENJAMIN I. HARRISON, Knoxville: The following plan of general management for the surgical care of gastric and duodenal ulcers has been found to be efficient: 1. Preoperative: Water equilibrium in the presence of dehydration should be established. Glucose should be administered if starvation is imminent. Whole blood transfusion should be done if anemia is found. 2. Operative: Local anesthesia in conjunction with nitrous oxid and oxygen. Ample incision, reducing traction to the minimum and permitting a direct vision of all points of operation. A sharp knife used for all dissection, the cobbler stitch for all through and through viscera suturing, with close approximation of peritoneal coats, utilizing the submucous coat as the anchor. Absorbable suture material should be used throughout the work. 3. Postoperative: The maintenance of water and food balance. Control of all pain and restlessness, thus promoting sleep and repair. Transfusion of blood should be done, if indicated; early use of the stomach tube, if there is evidence of fluid accumulation. Prolonged control of dietetic and hygienic measures.

Surgical Conditions of Gallbladder and Ducts

DR. W. A. BRYAN, Nashville: The duty of pathologic conditions of the gallbladder may be fairly estimated to be a study of cholecystitis, if we are willing to omit a few rare conditions, most of which never bring the patient to either physician or surgeon. In the beginning, cholecystitis is rather simple in pathology and in symptomatology; in treatment it is rather sure, having an exceedingly small mortality. As it progresses, it reaches out and dismantles first one fortress of defense and then another, increasing the difficulty, increasing the duration and shock of operation, diminishing the chances of complete cure and multiplying the mortality until we are sometimes compelled to refuse certain of the late cases as utterly hopeless, or to operate in the fear of a staggering mortality. This is the course of pathologic advance of gallbladder disease. Is it reasonable to wait?

Treatment of Acute, Mechanical Intestinal Obstruction

DR. FRANK WARD SMYTHE, Memphis: Cathartics are strictly contraindicated. Analgesics should not be given until consent for operation has been obtained. They can in no way relieve the obstruction; but, because they ease the patient they may cause procrastination and hourly decrease the chance for recovery. After consent for operation has been given, morphin should be administered, for by its use peristalsis is somewhat checked. Body heat must be preserved, and fluids given subcutaneously or intravenously. The anesthesia is important. A method is desired that will give the patient sufficient relaxation and at the same time tax the patient as little as possible. The operative treatment depends on the findings, which may be conveniently classed into three groups: (1) cases in which the cause of the obstruction can be readily detected, easily reached and does not require resection; (2) those in which the cause of the obstruction cannot be found, or cannot be safely handled on account of the great amount of pathologic change or the poor general condition of the patient; (3) cases in which resection is imperative.

Rational preoperative and postoperative treatment is essential. The operation should be one that will assure drainage; no more. Too much surgery is almost always fatal.

Ventral Tumors of the Sacrum

DR. H. W. HUNDLING, Memphis: Ventral tumors of the sacrum, so-called Middeldorpf tumors, are definitely encapsulated, usually attached to the periosteum, and tend to erode the bone. The greatest pressure is exerted on the neural and not on the rectal side. Remains of the lower neural canal and postanal gut appear to be the source of many of the ventral tumors. All the tissues of the body may be represented in the growths. Ventral sacral tumors seldom metastasize, but usually cause death by infiltration. The blood picture is practically always normal, and urinalysis rarely shows abnormal findings. Systemic reaction is mild. Constipation and pain resembling sciatica are often the only symptoms. The roentgen-ray findings are practically always negative. Treatment consists of complete removal of the tumor, followed by extensive radium irradiation. Five patients with ependymal cell gliomas were operated on. The average age was 46 years. One patient was perfectly well ten years after operation, and one was improved nineteen months after, but complained of disturbance of function of the bladder and bowels. One died of recurrence nine years after removal of the growth. An exploration was made in one case, which proved to be inoperable, and the patient died fourteen months later of intestinal obstruction. The fifth patient had a recurrence two years after operation, but without discomfort. Dermoids were removed in four instances. The average age of these patients was 30 years. Postoperative data were obtained in three cases. One patient was well one year after operation, and another eight years after. One had a recurrence five years after the removal of the tumor. There were three patients with foreign body giant cell tumors. The average age of these patients was 40 years. One was apparently well fifteen months after removal of the growth. Almost complete recovery was reported by another, ten years later. A third patient died following operation. Carcinomas were found in two instances. One patient, aged 40, had an adenocarcinoma, and was practically well two years after operation. The other, aged 49, had a colloid carcinoma and was markedly improved three years following its removal. Myomas were removed in two instances. One patient, aged 37, was improved three years after operation, and another, aged 56, died from recurrence one year after operation. One patient, aged 64, with a myosarcoma, died from recurrence one year after operation. One, aged 19, died from recurrence fifteen months after the removal of a sarcoma. The growth was composed of foreign body giant cells with mitoses. An inoperable basal cell epithelioma was found in one instance.

Foot Displacements and Weight Bearing

DR. R. F. PATTERSON, Knoxville: Conditions causing disturbance of the weight bearing centers are largely a question of balance. Anything that weakens one of the four groups of muscles maintaining foot balance will allow the opposing group to get the upper hand, and distortion will occur. This must be prevented by appliances or operations to restore muscle balance. Likewise, bony deformity prevents their normal action and therefore must be corrected. In all injuries to the foot and leg, especially fractures near the

ankle, complete reduction of deformity must be secured, confirmed by the roentgen ray. Most deviations from paralytic, congenital or static causes can be corrected and held by proper braces before bony changes take place. Skeletal operations are usually necessary after deformity becomes fixed and great bone distortion has taken place.

Ununited Fractures

DR. WILLIS C. CAMPBELL, Memphis: Reduction of fractures should be accomplished with minimum trauma of the soft parts and without numerous attempts. In open reductions of fresh fracture, which is seldom necessary, care should be taken not to destroy or inhibit natural osteogenic elements. In operation for ununited fractures, as small an area of periosteum as possible should be disconnected from the bone, leaving attached muscles and soft tissues from which nutrition is derived through the blood stream. The results have been all that could be desired, the time of consolidation materially lessened, and function thereby conserved by earlier active motion.

Arteriosclerosis: Diagnosis and Treatment

DR. ROY A. DOUGLASS, Huntingdon: The help we may give arteriosclerotic patients is unlimited. It consists in controlling their exercise, diet and habits, and removing the focus of infection in some cases. The exercise must be all they can tolerate, and their diet sufficient to prevent starvation and using up the stored fat and protein in the body. In the young and moderately advanced, removal of the focus of infection certainly is of great benefit. In the aged or very weak, I can see no benefit to be derived from extracting many bad teeth or any other operation that produces shock. So long as the kidneys function normally, the patient can usually attend to ordinary business. When the specific gravity becomes from 1.002 to 1.008, he usually suffers so much from headache and weakness that he is almost an invalid. We must examine these people carefully to advise them about surgical conditions. The patient must be told what work he can do. The frequent removal of tonsils and the better care children are taking of their teeth should lessen the number of these patients in the future.

Insulin in the Treatment of Diabetic Complications

DR. W. T. DESANTELLE, Knoxville: I believe that prompt use of insulin, carefully checked by blood sugar determinations, offers the greatest hope in complications of diabetes mellitus. I would not hesitate, even in cases of the slightest skin infection, to clear the urine of sugar at the earliest possible moment, using insulin at the very start. That intercurrent infection decreases the carbohydrate tolerance is shown by the enormous doses necessary to decrease glycosuria during the height of the infectious process, and the subsequent lowering of the amount required as the infection subsides. The insulin alone cannot overcome an infection or repair pathologic changes of any kind. The distorted metabolism resulting from diabetes impairs in some way the natural protective agencies of the body, thus removing normal restrictions to destructive processes. Insulin assists in restoring the distorted metabolism, and thus enables the natural protective agencies to resume their activities.

Fractures of the Skull

DR. MURRAY B. DAVIS, Nashville: In thirty-two cases observed, there were nine fractures of the base, with four deaths, or a mortality of 44 per cent., and four cases of massive brain injury with four deaths, or a mortality of 100 per cent.; five simple fractures of the vault with no deaths, or no mortality; ten compound and depressed fractures of the vault with two deaths, or a mortality of 20 per cent., and four cases of gunshot wounds of the skull with two deaths, or a mortality of 50 per cent.

All wounds of the scalp should be explored. They should be enlarged, if necessary, to allow an investigation of the bone directly underneath and in the immediate vicinity of the wound. All patients with head injury should be kept under observation for at least twenty-four hours, to rule out intracranial hemorrhage. The blood pressure of every patient should be taken every hour for the first five hours, and it should be borne in mind that a steadily increasing blood pressure is diagnostic of intracranial pressure. An ophthalmoscopic examination, and a roentgen-ray examination should be made in all cases when possible. A spinal puncture should be made in all cases; a bloody spinal tap is diagnostic of subdural hemorrhage. In cases with increased intracranial pressure, the pressure should first be attempted to be relieved with repeated spinal taps, before one resorts to any drainage operations on the skull.

The Management of Heart Conditions in Children

DR. JOHN T. BARBEE, Knoxville: Cardiac functional and organic diseases occur in childhood more often than believed, especially after the eighth year of age. Owing to a sensitive nervous system, delicate digestion, and the influence of puberty, functional heart conditions are common in childhood. The functional murmurs are generally systolic, and disappear on lying down or on holding the breath, and the cardiac area is not increased. Organic heart disease is more destructive in childhood than in adult life. Endocarditis is due mainly to rheumatism. Myocarditis occurs more in pneumonia, diphtheria, scarlet fever and typhoid. It is largely preventable, by the removal of tonsils, leaving no stubs, and other known foci of infection. Diseased tonsils are the greatest enemy of the heart. It is further preventable by the control of infectious fever, the use of diphtheria antitoxin and toxin-antitoxin, typhoid vaccine to prevent typhoid fever, and vaccination against smallpox. We should uphold the law in enforcing quarantines. An early diagnosis of cardiac infections paves the way to many absolute cures. Functional disorders of the heart do not require confinement, but acute organic infections do, and it should be continuous and prolonged, with absolute rest in bed during the acute stage. Opium and bromids are our best early remedies.

Intracranial Hemorrhage in the New-Born

DR. J. G. EBLEN, Lenoir City: Early diagnosis and early treatment are the most essential part in these cases. If these cases become surgical, and we feel incompetent, we should call in the man who can. If we learned to palpate the sutures, especially the sagittal suture, in all of our newborn and become familiar with what is normal, it will help in diagnosis. When jaundice appears in the new-born a few days after birth, one should look for other symptoms of intracranial hemorrhage, which is the most frequent cause of cyanosis in the new-born; congenital heart disease is one of the most infrequent. We should remember that intracranial hemorrhage is ten times more frequent than congenital heart disease in the new-born.

Acute Intestinal Obstruction

DR. LYLE B. WEST, Chattanooga: Jejunostomy is preferred because it is at or near the probable seat of origin of the toxin, it is more easily located and identified than the lower portions because of its atachment at its beginning by the ligament of Treitz, its walls are thicker and its lumen larger, making possible a firmer closure. The jejunum and lower intestines can be thoroughly drained by jejunostomy and oft repeated instillations and siphonage of saline or sodium bicarbonate solution. My plea is for a more frequent use of jejunostomy as a life-saving measure, and to allow the patient to return more nearly to normal before the more radical relief of the obstruction.

Radium as a Therapeutic Agent

DRS. L. C. SANDERS and S. W. COLEY, Memphis: The indiscriminate use of radium is harmful, and tends to place a valuable therapeutic agent in disrepute. Careful selection of cases should be made. The soft rays of unscreened radium have the highest therapeutic value. The failures in the use of radium are usually due to faulty technic or improper selection of cases. Highly malignant, rapidly growing carcinomas are often not benefited by irradiation. Radium and the roentgen ray are so closely associated in their therapeutic effects that each is indispensable to the other in a modern laboratory.

Medical School Inspection in Knoxville, Tenn.

DR. HENRY K. CUNNINGHAM, Knoxville: Knoxville has the honor of being the first city south of the Ohio to provide medical inspection in public schools. The work was started in 1906. There are now engaged in this work three physicians and five nurses; a colored physician and a colored nurse look after the negro students. The white scholastic population numbers around 20,000 pupils, so that each physician has half this number to look after, and each nurse has charge of about 5,000 pupils. Once a year the children are gone over thoroughly, starting in the lowest grades and working upward. The examinations are made outside the classroom, and consist of a general examination for postural defects, undernourishment, vermin and vaccination scars. A more detailed inspection is made of the eyes. The ears are examined for impaired hearing and discharge or other abnormalities. Next in order are examined the teeth, tonsils, neck, heart and lungs. Underweight is only one point in diagnosing malnutrition. The following other signs should be looked for: delicate, sallow, pasty skin; dry, lusterless hair; flabby flesh, relaxed muscles and protruding shoulder blades. The physician makes out a schedule at the beginning of the year, visiting each school on a certain day, and all his schools once a week. If an emergency arises, the physician is sent for or the patient is sent to his office for treatment. Orthopedic cases are looked after by the Kiwanis and Rotary clubs. Literature regarding diphtheria and the Schick test are given to the children to take home to their parents to read. The sanitary inspection of school buildings, and fire escapes and fire drills come under the work of the school physician.

Indications for Treatment in Fibroid Tumors of the Uterus

W. C. DIXON, Nashville: Three plans of treatment are available: (1) letting the tumor alone; (2) employing radiotherapy, and (3) employing surgery. Many factors must be considered in deciding whether or not the tumor is producing symptoms; the nature of the symptoms; the age of the patient; the size of the tumor and its rate of growth; its association with other pathologic conditions of the pelvis; other organic disease of a serious nature, and degenerative changes in the tumor. Symptom-producing tumors at the menopause call for active treatment. That radiotherapy has a powerful effect on these tumors, and on the symptom of hemorrhage in particular, is no doubt true; that this effect is not always conservative and not always without danger is also true. It has its limitations, but it should be accepted as a valuable method within those limitations. Pelvic infection is a contraindication to radiotherapy; it may light up latent infection. This is particularly true of radium. Tumors larger than a three and one-half months' pregnancy, and submucous and subserous tumors are best treated by surgery. Surgery still remains the chief dependence in the treatment of this condition.

The Prevention of Heart Disease

DR. W. H. WITT, Nashville: According to Dr. Cabot, the rheumatic, syphilitic, nephritic and arteriosclerotic groups comprise 90 per cent. of cardiopathy. I am not so sure of this if we assign to a separate group the influenzal cases and those due to chronic foci of infection. Of the others, the thyroid group is probably the largest. I purposely omit septic endocarditis, which is essentially not a heart disease but a general bacteremia. It is apparent that on the family physician devolves the task of lessening their incidence. The inspection of school children, carefully and periodically done, will go far to discover children who have diseased tonsils, adenoids and bad teeth; not a few cases of heart disease will be detected. The other public agency worth while is that for venereal control. Every child that has rheumatic fever, myositis, fleeting joint pains or chorea or recurrent tonsillitis is potentially a heart case, and prompt steps must be taken to prevent recurrences of those infections. No child should be allowed to have more than one attack of arthritis before instituting efforts at prevention of recurrence. Every reasonable effort should be made to eradicate all foci of infection. The incidence of the syphilitic heart, aortitis and aneurysm will depend almost entirely on the thoroughness with which that disease is treated. The prevention of heart complications of nephritic origin and of heart disease growing out of generalized or localized arterial disease is commensurate with our ability to prevent and to treat these diseases. Sensible living in its broadest sense will be as near a preventive and a treatment as more elaborate lines of procedure. Whatever hygienic measure will serve to prevent essential high blood pressure will ipso facto relieve a strain upon a heart probably itself supplied by sclerosed vessels.

Splenectomy

DR. BATTLE MALONE, Memphis: A poorly nourished woman, aged 33, the mother of six children, had chills and fever during the summer and fall, and had knowlege of an "ague cake" for two or three months previous to the acute illness, which began six days before I saw her. While lifting some heavy kitchen utensil, she was seized with an intense pain along the left costal margin, and soon after noticed an absence of the "ague cake" and detected the presence of a mass in the right lower quadrant, which rapidly increased in size. She had great pain and had been under the influence of morphin during the past six days. A mass was found occupying the right lower fourth of the abdomen. There was a well defined ridge along the upper margin, extending up to the umbilicus. The mass was tender, and efforts to move it caused great pain. The diagnosis was dislocated spleen with twisted pedicle. The blood examination showed: hemoglobin, 85 per cent.; coagulation time, eight minutes; erythrocytes, 4,280,000; leukocytes, 8,800; small lymphocytes, 23 per cent.; large lymphocytes, 8 per cent.; polymorphonuclear neutrophils, 69 per cent. With this picture, combined with a history of chills, we assumed that we were dealing with a malarial spleen. Dec. 8, 1923, a high left rectus incision revealed the spleen very large, twisted half a revolution on its pedicle, lying in the right lower quadrant of the abdomen; there were no adhesions. The tail of the pancreas was densely adherent to the under surface of the spleen. The abdomen was filled with a large amount of bloody fluid. The spleen was delivered, the pancreas separated, the pedicle ligated and the spleen removed. Twenty grains (1.3 gm.) of quinin was given intramuscularly, and 3 c.c. of hemoplastic serum. Convalescence was stormy for the first few days. On the third day the blood showed one estivo-autumnal parasite. Quinin was administered throughout, and the patient went home on the fifteenth day in excellent condition. The pathologic diagnosis was hyperplasia of the spleen. While cases of displaced spleen with twisted pedicle are not uncommon, the unusual feature of this case was the involvement of the pancreas, which was enormously displaced.

A Plea for a More Scientific and Humanitarian Consideration of the Lying-In Patient

DR. WILLIAM N. LYNN, Knoxville: Statistics show that the mortality from childbirth is on the increase in the United States. A good working knowledge of the anatomy and physiology of structures concerned in obstetrics is essential. A correct estimate of our individual responsibility to our lying-in patients and a willingness to put forth our best endeavors in our work are essential to a successful accomplishment of a proper service. Analgesia and anesthesia have an established place in the management of labor, the one in the first stage, the other in the second stage. The opium group give the best results in the first stage, and, properly administered, are a great boon to both patient and physician in that period. Ether is the anesthetic of choice in the second stage, in the majority of cases. The detection and proper management of exhaustion is probably the most important single point in the management of labor. Obstetric work always carries with it the responsibility of two lives. This responsibility is moral, legal, social, professional, constant, continuous and holy, and it should not be conscienceless. Haphazard midwifery in our profession is accountable for part of the obstetric deaths in our country, appalling in number, and perhaps mostly preventable. We cannot be unmindful of our great personal obligations, as physicians, to lying-in patients.

Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

27: 297-420 (April) 1924

*Anemia in Infancy: Urobilin Content of Stools of Normal Infants. B. S. Denzer and K. K. Merritt, New York.—p. 297.
Meningeal Hemorrhages in New-Born and Remote Consequences. A. Gordon, Philadelphia.—p. 303.
*Acidity (Hydrogen Ion Concentration) of Infants' Stools. F. F. Tisdall and A. Brown, Toronto.—p. 312.
*Thrombocytopenic Purpura Hemorrhagica Successfully Treated by Splenectomy. M. H. Bass and P. Cohen, New York.—p. 332.
*Acute Pelvic Abscess in Children. Two Cases Rupturing into Vagina. P. Rosenblum and R. B. Bettman, Chicago.—p. 336.
Volume of Blood in Normal Infants and in Infants with Malnutrition. H. Bakwin and H. Rivkin, New York.—p. 340.
Comparison of Metabolism of Mineral Constituents of Cow's Milk and of Breast Milk in Same Infant. C. C. Wang, D. B. Witt and A. R. Fletcher, Chicago.—p. 352.
*Anemia in New-Born. H. H. Donnally, Washington, D. C.—p. 369.
*Acute Fatty Enlargement of Liver in Infants. Four Cases. J. L. Kohn, New York.—p. 376.
Résumé of Literature for 1921 on Tuberculosis in Childhood. M. G. Peterman, Rochester, Minn.—p. 382.

Anemia in Infancy.—Denzer and Merritt tried to determine the rôle of excessive blood destruction in certain of the anemias of infancy. Preliminary to such studies it was necessary to determine the urobilin output in the stools of normal infants, or rather of infants whose hemoglobin fell within normal limits, and who were not suffering from any acute disease. Urobilin is found in the stools of infants as early as the second week. The urobilin of the stools of normal infants from 2 weeks to 1 year of age varies from fifteen to 150 dilution units (Wilbur and Addis method).

Acidity of Infants' Stools.—The factors which influence the acidity of the stools are discussed by Tisdall and Brown. From the chemical standpoint the acidity apparently depends on the ratio, in the intestinal zone of fermentation, of the carbohydrate on the one hand to the protein and base on the other. The amount of carbohydrate in the zone of fermentation apparently is influenced by the extent of the bone of fermentation, by the type of carbohydrate and by the state of health of the intestinal cells.

Splenectomy in Purpura Hemorrhagica.—The patient whose case is cited by Bass and Cohen was 8 years of age and had been under medical treatment for three years without any improvement. Splenectomy was followed by immediate improvement. Before operation the bleeding time was twenty minutes. One hour after the spleen had been removed the bleeding time had decreased to five minutes; twenty-four hours later it had decreased to one minute. It remained at from one to one and one-half minutes from that time on, being still the same five months after operation. The patient has been perfectly well since the operation five months ago.

Acute Pelvic Abscess in Children.—Three cases of acute pelvic abscess formation are reported by Rosenblum and Bettman, with relief of symptoms in each case after drainage. In the first two cases, this occurred spontaneously through the vagina, and in the third case, artificially by operation. In the third case the cause of the abscess was proved to be not the appendix, and it probably did not originate from the internal genitalia, which were palpated and found to be normal. The abscess possibly originated from the retroperitoneal structures and was presumably of glandular origin.

Anemia in New-Born.—The case reported by Donnally was one of severe anemia in an otherwise healthy new-born infant. The anemia was so severe at 12 days of age that the patient seemed to be in danger of death. Examination of the blood showed various evidences of bone marrow activity and new blood formation, such as nucleated red blood cells of both types, poikilocytes, polychromasia, stippling and macrocytes; an increased number of platelets; while on the part of the white blood cells, myelocytes, metamyelocytes and pathologic lymphoid forms were present. A color index of 1 was present when the anemia was most marked at 12 days of age, and persisted while the anemia was disappearing. The patient's recovery was complete and subsequent development during three and a half years has been normal.

Acute Fatty Enlargement of Liver in Infants.—Four cases of acute fatty enlargement of the liver in infants, with a clinical picture of severe toxemia are reported by Kohn. In two cases, the etiology was evident; one infant had ingested insecticide paste which contained phosphorus; in the other arsenic was demonstrated in a chemical examination of the organs. In the two remaining cases the etiology was unknown. Both children were almost entirely breast fed at the time of admission to hospital. There was nothing characteristic in the history. One child had had a convulsion five weeks previously; the other had had intermittent vomiting for the last two months. These fairly well developed children were acutely ill with a moderate rise in temperature, a mild degree of generalized icterus and a tremendous enlargement of the liver, the right lobe extending below the crest of the ilium, the lower edge of which could easily be felt on rectal examination.

American Journal of Hygiene, Baltimore

4: 77-153 (March) 1924

Effect of Guinea-Pig Tissues in Vitro on Virulent Tubercle Bacilli. H. J. Corper, M. B. Lurie and O. S. Kretschmer, Denver.—p. 77.
Biologic Relationships of Diphtheria Groups of Organisms as Shown by Complement Fixation Reaction. I. Bacillus Diphtheriae Versus Bacillus Hofmanni. C. G. Bull and C. M. McKee, Baltimore.—p. 101.
Preferential Feeding Experiments with Anopheline Mosquitoes, II. C. G. Bull and B. D. Reynolds, Baltimore.—p. 109.
Review of Recently Published Reports on Serum Treatment of Type I Pneumonia; Report of 445 Additional Cases. A. K. Wadsworth, Albany, N. Y.—p. 119.
Application of Experimental Methods to Epidemiology. L. T. Webster, New York.—p. 134.
Infection Experiments with Trichomonas. R. W. Hegner, Baltimore.—p. 143.

American Journal of Medical Sciences, Philadelphia

167: 313-468 (March) 1924

*Clinical Significance of Pathologic Changes in Hodgkin's Disease. D. Symmers, New York.—p. 313.
*Necrosis and Gangrene of Urinary Bladder. C. C. Wolferth and T. G. Miller, Philadelphia.—p. 339.
*Medical Biliary Drainage. A. Sachs, M. C. Howard and W. M. Barry, Omaha.—p. 368.
*Kolmer Modification of Complement Fixation Test for Syphilis. R. A. Kilduffe, Los Angeles.—p. 392.
*Insulin in Treatment of Diabetes. D. S. Hachen, Cincinnati.—p. 403.
*Postoperative Massive Pulmonary Collapse and Drowned Lung. S. S. Leopold, Philadelphia.—p. 421.
*Case of Primary Carcinoma of Bladder with Metastasis to Brain. W. E. Lower and R. M. Watkins, Cleveland.—p. 434.

Enlargement of Abdominal Lymph Nodes Characteristic of Hodgkin's Disease.—It appears from Symmers' study that the conception that Hodgkin's disease is most commonly evident in the lymph nodes of the neck must be abandoned. In his fourteen cases there was enlargement of the abdominal lymph nodes or of the abdominal and thoracic nodes in combination ten times more frequently. The lymph nodes of the neck were not enlarged at all in four. They were secondarily involved to a slight extent in three cases, and in six they were more or less markedly enlarged, but always in association with collections in the deeper parts that were proportionately far more massive. In the remaining case the cervical nodes were enormously enlarged. The brunt of attack in Hodgkin's disease is borne by the lymph nodes of the abdomen, thorax, neck, axilla and groin and by the auxiliary lymphoid system, including the spleen and liver and other residual lymphoid collections in various parts of the body; while that vast array of lymphoid follicles which lies in the submucosa of the gastro-intestinal, respiratory and urinary tracts virtually always escapes intact. From this it is apparent that the provocative agent in Hodgkin's disease has a selective action on certain groups of lymphoid tissue—a peculiarity which it shares with chronic lymphatic leukemia. Evidence is offered that Hodgkin's disease may reveal itself most prominently in organs other than the lymph nodes—that enlargement of the spleen or the thymus or the liver may be

the predominant feature, the associated lymph node enlargements assuming a place of secondary importance. This study also emphasizes the fact that in Hodgkin's disease the skeletal muscles may be destroyed extensively by tissue of the same sort as that in the lymph nodes. In this series destructive changes are recorded in three cases, namely, in the intercostal and pectoral muscles in one case, in the pectorals and the psoas magnus in one case, and in the muscles of the forearm in one case. Evidence is also presented which tends to show that in the reactions in the lymph nodes and in the bone marrow there is a certain parallelism between Hodgkin's disease and chronic myelogenous leukemia. This suggests that the two diseases are fundamentally related and that they probably represent different qualitative responses to the same type of provocative agent.

Necrosis and Gangrene of Urinary Bladder.—One hundred and fifty-three cases of necrosis or gangrene of the urinary bladder are reviewed by Wolferth and Miller. It is suggested that this affection is not so rare as reports in the literature indicate. No single etiologic factor can be determined for all the cases, but either infection, circulatory disturbance or chemical irritants, or a combination of these factors, would seem to explain the causation in virtually all instances. The pathology and clinical features are reviewed. It is suggested that cystotomy might be a justifiable and beneficial procedure in the more severe cases.

Medical Biliary Drainage.—By means of animal experiments Sachs and his associates determined that the gallbladder contracts; its contraction, however, is minimal. The gallbladder and the common duct sphincter are probably regulated by a definite reflex mechanism, but more proof is needed before this can be accepted as true. Gallbladder contraction alone does not empty the gallbladder and other external factors assist in expelling part of its contents. The gallbladder is more than a reservoir; it undoubtedly has definite functions even though these functions are not essential to life. Biliary drainage is of some value diagnostically, but in the authors' opinion it is of no value in differentiating cholecystitis from cholelithiasis. Biliary drainage is of more value as a therapeutic adjunct than as a diagnostic agent. It is curative in mild cases; however, it is to be used more as a palliative measure than a curative agent. Surgery is the best means of attack in most biliary infections. Biliary drainage has definite therapeutic value other than being a mere psychic aid.

Kolmer Modification of Syphilis Test.—An analysis is presented by Kilduffe of the Kolmer modification of the complement fixation test for syphilis in a series of 2,000 serums in relation to the requirements of the clinician, and he concludes that the method is suitable for adoption as a standard test and that it is superior to any as yet proposed.

Treatment of Diabetic Coma.—The treatment of diabetic coma described by Hachen is as follows: Patients are covered with warm blankets and surrounded by hot water bottles. Fifty units of insulin are administered intravenously in 200 c.c. of 15 per cent. glucose. The blood is examined for sugar and alkali reserve before and several hours after the injection of insulin. Large doses of insulin are continued hypodermically, together with glucose intravenously or by mouth; the latter method is the one of choice, if the patient is conscious. Large quantities of glucose are given with large doses of insulin to create a tremendous metabolic fire, so that the accumulation of ketone bodies will cease. The ketone bodies already present are washed out with large quantities of fluid and alkali. Fluids are given by every avenue of approach, from 5,000 to 6,000 c.c. in twenty-four hours. Alkalis are given in the form of sodium bicarbonate by rectum or intravenously. As soon as the patient emerges from coma, measured quantities of food are given with insulin. A fall in the blood sugar and the absence of glycosuria are indications for the administration of more glucose. The failure of a rise in the alkali reserve is an indication that more insulin is required.

Postoperative Massive Pulmonary Collapse.—Four cases of postoperative massive pulmonary collapse are reported by Leopold. The opinion is advanced that "massive collapse and drowned lung" exist and that the roentgenographic findings are thus better explained. Complete bronchial obstruction offers the best explanation for the cause of this condition.

Carcinoma of Bladder with Brain Metastases.—In Lower and Watkins' case, difficulty in urinating was the first symptom; then a little loss of control of the left foot and a slight speech defect. Cystoscopic examination revealed a round fungating tumor just inside the internal sphincter of the bladder slightly to the right of the median line. The possibility that there might be also a tumor of the brain was considered at this time, but the eyeground examination and the roentgen-ray examination of the skull were negative. The growth in the bladder, when removed, proved to be a transitional cell carcinoma. A short time after the removal of the bladder tumor the difficulty in walking and the speech defect became more pronounced and a clinical diagnosis of brain tumor was made. Six weeks after the bladder operation a circumscribed tumor was removed from the right internal capsule, which was found to be also a transitional cell carcinoma. Ten months after the bladder operation, there was no sign of recurrence. There was still some paralysis of the left arm and leg and the difficulty in speech had increased. The patient died ten months after removal of the brain tumor from a recurrence of the tumor in the brain.

Annals of Clinical Medicine, Baltimore

2: 273-356 (March) 1924

Insulin in Diabetes. H. J. John, Cleveland.—p. 273.
*Disease of Gallbladder in Young. G. B. Eusterman, Rochester, Minn.—p. 283.
Important Factors in Bronchial Asthma. W. Lintz, Brooklyn.—p. 286.
Fractional Analyses. J. Friedenwald, W. H. Gantt and T. H. Morrison, Baltimore.—p. 292.
*Hyperthyroidism Complicating Pregnancy. A. S. Jackson, Madison, Wis.—p. 303.
Abscess of Lung, Roentgenographically Considered. W. H. Stewart, New York.—p. 312.
Leprosy in Hawaiian Islands. D. W. Montgomery, San Francisco.—p. 329.
Physiology, Pathology and Clinical Aspect of Intervertebral Foramina. A. Gordon, Philadelphia.—p. 333.
Treatment of Syphilis. O. L. Mulot, Brooklyn.—p. 341.
Desensitization in Hay-Fever Treatment. A. H. W. Caulfeild, Toronto.—p. 348.

Gallbladder Disease in Young Persons.—The 117 cases of gallbladder disease occurring in persons up to the age of 25, that are analyzed by Eusterman, constituted 0.85 per cent. of the total number of cases of the disease seen in the Mayo Clinic. The absence of sex preponderance in young persons, it is said, supports the infection theory of the etiology of acute and chronic calculous and noncalculous cholecystitis. Tonsillar sepsis, appendicitis, rheumatic fever, grippe and influenza played an important part in the cases observed. Typhoid was comparatively infrequent. Young patients with congenital hemolytic icterus, or hypertrophic biliary cirrhosis, with associated splenomegalia, frequently had associated disease of the gallbladder, usually with stones. Young persons of both sexes with gallstones had histories fairly characteristic of biliary calculi. The seizures were typical in a large percentage of the cases, and jaundice was present at some time in from 33 to 40 per cent. The percentage of correct diagnosis was high. The clinical picture in the chronic cholecystitis series in both sexes was frequently ill defined. In males the symptoms were characterized chiefly by a mild or asymptomatic type of gallbladder history and the frequency (30 per cent.) of an intrinsic type of gastric complaint. In young women, frank colic and icterus were infrequent. The gastric picture simulating ulcer was also less frequent, but a flatulent type of dyspepsia was noted.

Hyperthyroidism Complicating Pregnancy.—Jackson reports two cases of hyperthyroidism in which a thyroidectomy proved as safe as in cases not associated with pregnancy.

Archives of Dermatology and Syphilology, Chicago

9: 423-546 (April) 1924

Histogenesis of Keratoderma Blennorrhagicum. H. L. Keim, Ann Arbor, Mich.—p. 423.
*Peri-Articular Fibroma of Skin. L. Savatard, Manchester, England.—p. 441.
*Experimental Production of Arsenic Resistant Strain of Spirocheta Pallida. J. V. Klauder, Philadelphia.—p. 446.

*XI. Effect of Mercurosal on Wassermann Reaction. D. L. Belding and R. H. Holmes, Boston.—p. 459.
*XII. Sulpharsphenamin in Treatment of Syphilis. D. L. Belding, Boston.—p. 470.
Arsphenamin Eruptions Resembling Lichen Planus. E. Ahlswede, Buffalo.—p. 479.

Periarticular Fibroma of Skin.—Savatard cannot agree that the old name of "synovial lesions of the skin" should be retained. He is convinced that most of these tumors are not of synovial origin. Roentgenotherapy seems to be the ideal treatment.

Arsenic Resistant Strain of Spirochaeta Pallida.—From the results of the experiments recorded by Klauder, it appears that the resistance to arsenic of the strain of *Spirochaeta pallida* studied was increased to a maximum of 68 per cent. To obtain this result it required a total of nine treatments with ascending doses of arsphenamin and a total of six transfers of the infection from one animal to another. The increased resistance to arsenic applied only to the action of the therapeutic active dose. The curative dose of arsphenamin in rabbit syphilis, about 0.012 gm. per kilogram, remained as such in the animals studied. The increased resistance was striking within these limits, beyond which no further increase developed.

Sulpharsphenamin in Syphilis.—Belding found sulpharsphenamin, when administered in appreciable doses, to be as effective in healing syphilitic lesions as neo-arsphenamin, but it produced a greater proportion of toxic disturbances in the patients. Dermatitis occurred in 16 per cent. of the patients irrespective of the dose, the more severe cases corresponding to the higher dosage. Varying degrees of peripheral neuritis, in no case pronounced, occurred in 56 per cent. of the adult patients receiving intravenous injections. In the intravenous cases this condition was present only when the dose exceeded three quarters of the maximum standard for neo-arsphenamin. For intravenous medication, sulpharsphenamin possesses the advantage of convenience in administration over arsphenamin and of a more stable solution over neo-arsphenamin, but the frequent production of toxic effects renders it less satisfactory for intravenous therapy than the other arsphenamins. Sulpharsphenamin is well suited for intramuscular injections in adipose women, children and other patients when the intravenous route is difficult or impossible. Its promiscuous administration under the impression of its low toxicity is open to criticism.

Archives of Neurology and Psychiatry, Chicago

11: 385-500 (April) 1924

Old Motor System and New. S. A. K. Wilson, London.—p. 385.
*Experimental Production of Basal Ganglion Symptomatology in Macacus Rhesus. H. Mella, Boston.—p. 405.
*Mechanism Underlying Inhibition in Central Nervous System. J. R. Hunt, New York.—p. 418.
*Tumor in Region of Foramen Magnum. J. H. W. Rhein, Philadelphia.—p. 432.
*Deformity of Foot in Dystonia Musculorum. S. P. Goodhart and W. M. Kraus, New York.—p. 436.
Comparative Study of Intraspinal Pressure, Blood Pressure and Intra-Ocular Tension. E. B. Block and R. H. Oppenheimer, Atlanta, Ga.—p. 444.
Mechanism of Splanchnogenic Pain. R. R. Arnau, New York.—p. 448.

Experimental Paralysis Agitans.—Mella endeavored to produce, experimentally, symptoms like those of paralysis agitans by administering manganese chlorid to monkeys. In monkeys poisoned with manganese, he observed certain abnormal movements and disturbances of locomotion, which are usually attributed to lesions in the basal ganglions. The histopathologic picture in these animals shows definite changes, most pronounced in the striatum pallidum and liver.

Cerebral Cells Have Specific Inhibitory Function.—Hunt presents evidence which, he believes, favors the theory of the existence of cells with specific inhibitory functions in the central nervous system. His studies of the corpus striatum seems to throw light on this important question. The function of inhibition in this organ is related to the small cells of the neostriatum which belong to Golgi's Type II. These Golgi cells are found in practically all ganglionic structures of the central nervous system and must have an important function, as they apparently increase in number in the higher levels of the central mechanism. They have been regarded as association cells, condenser cells and sensory cells, by different investigators. To these various views of their function, Hunt adds another, namely, that they are inhibitory cells acting in conjunction with excitory cells in the regulation of neural function. He regards inhibition as an active and specific manifestation of cell function, the two mechanisms working in harmony as in the vegetative nervous system. This theory implies the existence of excitomotor centers subserving an erethistic function, as well as inhibitomotor centers subserving a kolytic function.

Dural Endothelioma in Foramen Magnum Region.—Tumors in the region of or in the medulla oblongata are rare, and their symptomatology is indefinite. Rhein's case was one of dural endothelioma, which was found plugging the foramen magnum. The tumor had pushed the medulla oblongata over to the right and posteriorly. It rested over and completely covered the entire foramen magnum and was adherent to the dura on the left side only. Adherent to it and stretched over it was the ninth pair of nerves. The other cranial nerves were not implicated. The symptoms presented by this patient, that stand out as important localizing symptoms, were: pain in the posterior cervical region, with torticollis; paralysis of the muscles of the right side of the uvula and of the right side of the tongue; rapidly progressing paralysis of the limbs; feebleness of the voice, which was not constant, and slight difficulty in swallowing liquids. The case is extraordinary and interesting in that it shows the absence of symptoms referable to the medulla oblongata with the exception of pain in the neck and torticollis until a short time before death.

Dystonia Musculorum with Equinovarus Follows Epidemic Encephalitis.—Both cases cited by Goodhart and Kraus were instances of epidemic encephalitis in young girls eventually showing the clinical picture of dystonia musculorum deformans. In both patients, the movements produced extension of the lower extremities. In both, a mild permanent equinovarus position of the foot with flexion of the toes was present. The movements accentuated this. There was moderate rigidity in both lower extremities.

Archives of Ophthalmology, New Rochelle, N. Y.

53: 1-100 (Jan.) 1924

Local Control of Ocular Circulation. F. H. Adler, Philadelphia.—p. 1.
Blindness of Obscure Nasal Origin. W. H. Roberts, Pasadena.—p. 19.
Operation for Blepharoptosis with Formation of Fold in Lid. R. G. Reese, New York.—p. 26.
Duct Conservation in Lacrimal Abscess. A. E. Ewing, St. Louis.—p. 31.
Compensation Problem as Relating to Ocular Injury. A. C. Snell, Rochester, N. Y.—p. 37.
Facial Herpes Correlated with Faulty Oculomuscular Adjustment. C. W. Stevens, New York.—p. 60.

Atlantic Medical Journal, Harrisburg, Pa.

27: 331-398 (March) 1924

Surgery of Kidney and Ureter. E. S. Judd and A. J. Scholl, Rochester, Minn.—p. 331.
Diagnostic Methods in Renal and Ureteral Surgery. E. H. Adams, Danville.—p. 335.
Treatment of Small Ureteral Calculus. C. Haines, Sayre.—p. 338.
*Treatment of Accidental Occlusion of Ureter. P. B. Bland, Philadelphia.—p. 341.
Removal of Cataractous Lens by a Vacuum Method. F. C. Parker, Norristown.—p. 356.

Treatment of Accidental Occlusion of Ureter.—From the large number of cases of ureteral damage reviewed by Bland, it is apparent that such accident cannot be regarded as rare. The accident may happen during the performance of a wide range of surgical procedures. It is most likely to occur during hysterectomy, both vaginal and abdominal, but especially in the latter, and in the proportion of five to one, as observed in the cases recorded in this paper. Deep pelvic operations other than hysterectomy exact a definite toll of ureteral damage, notably those for intraligamentary tumors. Partial ureteral occlusion from postoperative periureteral adhesions occurs occasionally. In most instances ureteral occlusion or injury is unilateral. In a certain number of cases both sides are involved, the proportion being approximately six to one. In unilateral occlusion or damage the accident occurs with almost equal frequency on the two side. In 355 cases the

right side was affected 130 times and the left side 128 times. In ninety-seven cases the side affected was not mentioned. Ureteral injury as a surgical complication is responsible for a certain number of deaths, showing a mortality in bilateral cases of 33.3 per cent., and in unilateral cases a mortality of 18.8 per cent.

Boston Medical and Surgical Journal

190: 583-622 (April 3) 1924

Health Center. C. F. Wilinsky, Boston.—p. 583.
Hygiene of Nervous System. J. W. Courtney, Boston.—p. 589.
*Congenital Heart Block. E. C. Romberg and P. D. White, Boston.—p. 591.

Congenital Heart Block.—The clinical diagnosis in the case cited by Romberg and White was: congenital heart disease, probably patency of the interventricular septum. The electrocardiogram showed a complete heart block with an auricular rate of 160 and a ventricular rate of 70. The patient was only 9 months old.

Colorado Medicine, Denver

21: 83-120 (April) 1924

Nervous Disturbances as Result of Injury. G. A. Moleen, Denver.—p. 87.
Treatment of Malignant Growths About Face. S. Withers and J. R. Ranson, Denver.—p. 92.

Georgia Medical Association Journal, Atlanta

13: 85-124 (March) 1924

Sarcoma of Back. Three Cases. B. H. Wagnon, Atlanta.—p. 85.
Head Injuries. C. E. Dowman, Atlanta.—p. 87.
Common Renal Infections. C. L. Drew, Waycross.—p. 94.
Examination of Chest in Diagnosing Tuberculosis. A. M. Dimmock, Atlanta.—p. 97.
Diarrhea in Adults. T. Johnson, Atlanta.—p. 99.
Blood Chemistry; Importance to Urologic Surgery. R. J. Holmes, Chicago.—p. 102.
Neuropsychiatric Disabilities. W. A. Gardner, Atlanta.—p. 106.

Journal of General Physiology, Baltimore

6: 349-500 (March 20) 1924

Ionic Theory of Activity of Nerve Centers and of Propagation of Nerve Impulse. P. Lasareff.—p. 349.
Intensity Discrimination and Stationary State. S. Hecht, Boston.—p. 355.
Mathematical Treatment of Electrical Conductivity of Colloids and Cell Suspensions. H. Fricke, Cleveland.—p. 375.
Tropistic Reactions of Cerianthus Membranaceus. M. M. Moore, Naples, Italy.—p. 385.
Reaction of Cerianthus to Two Sources of Light. M. M. Moore, New Brunswick, N. J.—p. 393.
Luminescence in Mnemiopsis. A. R. Moore, New Brunswick, N. J.—p. 403.
Cell for Measurement of Cataphoresis of Ultramicroscopic Particles. M. Kunitz, New York.—p. 413.
Kinetics of Trypsin Digestion. II. Conditions Under Which the Reaction is Monomolecular. III. Course of Reaction with Constant Substrate Under Conditions Causing Inactivation of Enzyme. IV. Course of Reaction When Both Substrate and Enzyme Concentrations Are Decreasing. J. H. Northrop, New York.—p. 417.
Diffusibility of Calcium of Blood Serum Through Collodion Membranes. Effect of Sodium Chlorid and Changes in Hydrogen-Ion Concentration. R. F. Loeb, New York.—p. 453.
Iso-Electric Point of Gelatin at 40 C. D. I. Hitchcock, New York.—p. 457.
Theory of Regeneration Based on Mass Relation. III. Cause of Polar Character of Regeneration. J. Loeb, New York.—p. 463.
Ultimate Units in Protein Solutions and Changes Which Accompany Process of Solution of Proteins. J. Loeb and M. Kunitz, New York.—p. 479.

Journal of Metabolic Research, Morristown, N. J.

3: 641-813 (May-June) 1923

*Treatment of Diabetes with Insulin. W. D. Sansum and Others, Santa Barbara, Calif.—p. 641.
Old and New Treatment of Diabetes from Statistical Point of View. K. A. Heiberg, Copenhagen.—p. 677.
Inorganic Metabolism. III. Significance of Phosphates in Production of Tetany. F. P. Underhill, E. G. Gross and W. Cohen, New Haven, Conn.—p. 679.
*Effect of Rations Containing Whole and Skimmed Milk on Growing Puppies. M. Davis, Madison, Wis.—p. 711.
Effect of Various Rations on Young Normal Guinea-Pigs and on Young Guinea-Pigs Inoculated with Tuberculosis. M. Davis, Madison, Wis.—p. 725.
*Effect of Roentgen-Ray Exposure on Metabolism. A. L. B. Barreto, Baltimore.—p. 737.
Metabolism After Exposure to Roentgen Rays. J. H. Clark, P. S. Evans, Jr., and A. P. Chavarria, Baltimore.—p. 749.
Comparison of Dodds' and Sladden's Methods for Estimating Urinary Diastase. G. Cameron, Victoria, Australia.—p. 753.
*Nonprotein Nitrogen and Blood Pressure in Relation to Kidney and Heart Lesions. R. Floyd, New York.—p. 759.
*Diabetes. V. Acidosis. 1. Production of Diabetic Acidosis and Coma in Dogs. F. M. Allen, New York.—p. 775.
*Id. 2. Fat Intoxication. F. M. Allen, New York.—p. 797.

Insulin in Diabetes.—With the exception of a few cases that were seen after the onset of deep coma, insulin has proved a specific in the relief of all diabetic symptoms in 100 cases reviewed by Sansum and others. Patients promptly become free from acidosis and from abnormal sugar in the urine with the loss of thirst and frequent urination. As their diets are increased, they gain in weight and strength. Many of the patients, who were emaciated and weak to an extreme degree, and who, before insulin treatment, had a fatal prognosis, have regained their normal weight and strength. The authors have had no success with any method of administration other than the hypodermic route. They have given, orally, twenty-five times the subcutaneous dose to patients and to experimental animals with no success whatever.

Experimental Rickets.—Young puppies whom Davis fed a ration containing sufficient vitamin A for growth but not enough for prolonged maintenance developed bone lesions characteristic of early rickets. The severity of the lesion was in inverse proportion to the vitamin A content of the ration. The difference in general condition, however, was much greater than the difference in bone lesions on the different levels of vitamin A. Aside from the bone lesions, the most striking difference between the puppies that received whole milk and those that received skimmed milk was found in the thyroid.

Effect of Roentgen Ray on Metabolism.—Experiments made by Barreto show that after exposure to moderate doses of roentgen rays there is a marked, though short-lasting, increase in the rate of oxygen consumption.

Relation of Nonprotein Nitrogen and Blood Pressure to Heart and Kidney Changes.—Floyd endeavored to show certain relationships between nonprotein nitrogen and blood pressure on one hand, and structural changes in the kidney and heart on the other. The nonprotein nitrogen was determined during life in fifty cases in which necropsies also were performed and the organs examined microscopically. In only two fifths of these cases was nephritis the chief, or an important contributory, cause of death. The data presented indicate (1) that an increase in nonprotein nitrogen is more closely associated with an increase in the kidney stroma than with any other renal lesions studied, and (2) that increase of blood pressure and of heart mass is more closely associated with thickening of the renal arteries than with any other lesion studied, whether in the heart or kidney.

Experimental Diabetic Acidosis and Coma.—Allen found it simple to produce coma in diabetic dogs by fulfilling certain conditions of diet which are ordinarily present in human cases. Partially depancreatized dogs are subject to diabetic coma similar to that of human patients under similar conditions of feeding or fasting. One difference between clinical diabetes and that following total pancreatectomy is thus obviated, and, in Allen's opinion, the accurate reproduction of all details of the clinical picture strengthens the unitarian conception of diabetes as a pure pancreatic deficiency.

Fat Intoxication.—Fat intoxication, according to Allen's observations, may be caused by an excessive proportion of fat in the diet. Dogs fed on diets high in fat, not balanced with sufficient quantities of other foods, develop first indigestion and later intoxication. Besides a skin eruption with loss of hair, the chief symptoms are various grades of ataxia and muscular incoordination, and twitchings which before death may reach the point of convulsions. This intoxication is independent of both acidosis and diabetes, though some animals show the hyperglycemia and lowered glucose tolerance which seem to result from excessive fat diets. No organic lesions are found in the nervous system or viscera. The intoxication seems to be due entirely to the absolute and relative excess of fat. These results in a species comparatively immune to ketosis indicate that ketosis is not the only harmful feature to consider in connection with high fat diets.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

23: 87-161 (March) 1924

Artificial Pyrexia Induced in Rabbits by Injection of Plant Nucleic Acid. F. M. Hill, Adelaide, Australia.—p. 87.
*Insulin in Phlorizin Poisoning. C. F. Cori, Buffalo.—p. 99.
*Relation of Chemical Constitution of Organic Arsenical Compounds to Action on Optic Tract. A. G. Young and A. S. Loevenhart, Madison, Wis.—p. 107.
Effect of Compounds Related to Hydrazine in Producing Anhydremia and Experimental Anemia. M. Bodansky, Ithaca, N. Y.—p. 127.

Action of Insulin in Phlorizinized Animals.—The possibility that insulin stimulates the conversion of sugar into fat, or that it influences the sugar formation from other sources than glycogen, e. g. proteins, was investigated by Cori. Animals completely poisoned with phlorizin were used. Insulin caused a fall in blood sugar in these animals. The power of blood sugar regulation is not lost, however, since the blood sugar may return to normal some hours after the insulin injection. Insulin also produced a marked diminution in the sugar excretion of these animals. Insulin did not diminish to any larger extent the nitrogen excretion, and did not influence the sugar formation from proteins during complete phlorizin poisoning.

Arsenical Compounds Cause Eye Lesions.—Among the compounds studied by Young and Loevenhart, it was found that arsenicals with an amino group, or a substituted amino group in a para position to the arsenic, produced optic lesions in the rabbit. Organic arsenicals with the amino group, or substituted amino group in the ortho or meta position to the arsenic, produced no optic lesions in the rabbit. Evidently, in this particular group of compounds, the valence of the arsenic is not the most important factor in the production of optic lesions. However, the valence of the arsenic in certain instances can modify the intensity of action of a given substance on the optic tract. The most important factor in the production of optic lesions, therefore, is the presence of an amino group in the compound in the para position to the arsenic.

Journal of Urology, Baltimore

11: 205-325 (March) 1924

*Tumors of Kidney Pelvis and Ureter. G. J. Thomas and E. A. Regnier, Minneapolis.—p. 205.
Ectopic Opening of Ureter in Male: Case. R. V. Day, Los Angeles.—p. 239.
Pelves of Double Kidney. H. O. Mertz, Indianapolis.—p. 259.
*Surgical Significance of Abnormalities of Urinary Tract. O. S. Lowsley, L. B. Kingery and H. C. Clarke, New York.—p. 293.
Advantages of "Loading Slot" in Radium Emanation Implantation. J. Muir, New York.—p. 319.

Tumors of Kidney Pelvis and Ureters.—Thomas and Regnier collected 253 reports of tumors of the kidney pelvis and ureter. About 5 per cent. of the renal pelvic tumors were associated with renal stones; 67 per cent. were definitely malignant. All are potentially malignant. The symptoms were hematuria, in 83 per cent.; pain in 27 per cent.; tumor in 24 per cent.; loss of strength and weight in 23 per cent. The diagnosis is made from the history, pyelography, cystoscopy, the urinary findings and by exploration. The treatment consists of complete early surgical removal.

Abnormalities of Urinary Tract.—Lowsley, Kingery and Clarke present for analysis sixty-two cases showing one or more congenital defects of the kidney or ureter, taken from a series of 4,215 consecutive necropsies. Some form of renal anomaly was found in 1.47 per cent. of the cases examined.

Medical Journal and Record, New York

119: 281-332 (March 19) 1924

*Disseminated Tuberculosis. W. J. Carlson, Baltimore.—p. 281.
Vincent's Angina. Case. J. H. Hutton, Chicago.—p. 284.
Bronchial Asthma. W. Lintz, Brooklyn.—p. 287.
Legal Aspect of Good Surgery. C. F. Nassau, Philadelphia.—p. 290.
Commonsense in Medicine. B. Robinson, New York.—p. 292.
Sinusitis. F. W. White, New York.—p. 293.
Prolapse of Ventricle of Morgagni. Sabrazes and A. Lussan, Bordeaux, France.—p. 296.
Sterility in Women. A. Koplowitz, Brooklyn.—p. 300.
Geriatrics. M. W. Thewlis, New York.—p. 304.
Treatment of Acute Metastatic Arthritis. M. B. Cooperman, Philadelphia.—p. 306.
Autogenous Vaccine in Colon Bacillus Infections. A. M. Crance, Geneva, N. Y.—p. 308.

SUPPLEMENT

Mechanism of Human Heart During Death. F. A. Willius, Rochester, Minn.—p. xlix.
Appraisal of Heart Affections. S. C. Smith, Philadelphia.—p. lv.
Physiotherapy in Cardiovascular Disease. B. Parsons-Smith, London.—p. lvii.
Myocarditis. E. P. Boas, New York.—p. lix.
Exercise from Cardiovascular Viewpoint. A. E. Renner, New York.—p. lxi.
Digitalis Taken Continuously for Thirty-Six Years. L. F. Bishop, New York.—p. lxiv.

Disseminated Tuberculosis.—Carson reports the case of a child, aged 8 months, with a history of having been breast fed, delivered normally, weight at birth 7 pounds, and apparently well up to the age of 6 months, at which time a cough developed. He cried when touched and slept a great deal. He had had a spasm four weeks previously and vomited about every day. The baby died a few days after admission to the hospital. The necropsy report was: disseminated tuberculosis; caseous tuberculosis of lungs and mediastinal lymph nodes; tuberculosis of intestines and mesenteric lymph nodes; tuberculosis of ventricular wall—left, and middle segment of tricuspid valve; tuberculosis of liver, spleen, suprarenals, kidneys, testis and thymus; tuberculosis of dura, brain and skull bones, ribs and vertebra.

Missouri State Medical Association Journal, St. Louis

21: 61-98 (March) 1924

Bladder in Obstetrics and Gynecology. E. F. Schmitz, St. Louis.—p. 61.
*Serum Prophylaxis of Measles. S. E. Pesetke, St. Louis.—p. 63.
Rectal Examination in Conduct of Labor. L. A. Wilson, Cameron.—p. 64.
Acute Poliomyelitis. H. B. Norton, Center.—p. 65.
Tonsil and Focal Infection. G. S. Dowell, Braymer.—p. 67.
Organized Medicine: Its Position and Responsibility. S. P. Child, Kansas City.—p. 68.
Case of Arteriosclerosis and Erythemia—Polycythemia Vera. E. J. Schisler, St. Louis.—p. 82.

Serum Prophylaxis of Measles.—Twenty pupils of a school for the deaf were injected by Pesetke intramuscularly with 2 to 3 c.c. of serum obtained from adult measles patients from seven to twelve days convalescent. No reactions whatsoever were noticed. Two days later one of the pupils presented a very mild measles rash, with practically no catarrhal symptoms preceding and very little temperature. She was clinically well in another day or two, and the time relationship establishes this as an abortive case due to late injection. All others have presented no clinical measles since injection. One child, whose parents refused to sanction the procedure, developed typical measles about a week after the initial case.

New York State Journal of Medicine, New York

24: 483-532 (April 4) 1924

Cleft Palate in Infants. T. W. Brophy, Chicago.—p. 483.
Differential Diagnosis of Noneruptive Communicable Diseases in Infancy and Childhood. H. R. Mixsell, New York.—p. 488.
Genito-Urinary Tuberculosis. H. G. Bugbee, New York.—p. 491.
Relation of Physician to Antituberculosis Campaign. J. A. Miller, New York.—p. 494.
Early Physicians of Palmyra. H. L. Chase, Palmyra.—p. 498.

Public Health Journal, Toronto

15: 97-144 (March) 1924

Problem of Nervous Child. A. D. Blackader.—p. 97.
Full Time Health Officers. J. W. S. McCullough.—p. 106.

Rhode Island Medical Journal, Providence

7: 49-64 (April) 1924

"As Others See Us." W. B. Cutts, Providence.—p. 49.
Practical Lessons Learned from World War. W. S. Bainbridge, New York.—p. 52.

South Carolina Medical Association Journal, Greenville

20: 63-94 (March) 1924

Influenza in Infants and Children. C. W. Bailey, Spartanburg.—p. 71.
Ulcer of Stomach and Duodenum. R. L. Gibbon, Charlotte, N. C.—p. 73.
Roentgen-Ray Treatment of Deep Seated Lesions. F. D. Rodgers, Columbia.—p. 78.

Surgery, Gynecology and Obstetrics, Chicago

38: 431-578 (April) 1924

Biophysical Law Governing Surgical Mortality. G. W. Crile, Cleveland.—p. 431.
*Chronic Duodenal Stenosis. J. McKenty, Winnipeg, Can.—p. 444.
*Premature Separation of Normally Implanted Placenta. R. A. Scott, —p. 450.
*Nontuberculous Pulmonary Abscess. W. Whittemore, Boston.—p. 461.
Treatment of Acute and Chronic Empyema. E. A. Graham, St. Louis.—p. 466.
Surgery of Thorax. D. B. Phemister, Chicago.—p. 471.
Seventeen Life-Saving Bronchoscopies in One Case. H. L. Clerf, Philadelphia.—p. 472.
*Papillomata Involving Female Urethra. H. A. R. Kreutzmann, San Francisco.—p. 475.
*Lymph Glands in Carcinoma of Small Intestines. W. McK. Craig, Rochester, Minn.—p. 479.
Unilateral Polycystic Kidney. M. Meltzer, New York.—p. 486.
Arborescent Lipomata of Tendon Sheaths. Two Cases. J. R. White, Dunedin, New Zealand.—p. 489.
*Hydatid Cysts of the Spleen. H. W. Mills, San Bernardino, Calif.—p. 491.
Pleurisy of Hilum Region. Case. H. Swanberg, Quincy, Ill.—p. 506.
*Lesions of Ureter: Obstruction and Infection. C. K. Smith, Kansas City, Mo.—p. 509.
*Ventral Tumors of Sacrum. H. W. Hundling, Rochester, Minn. —p. 518.
Boiled Beef-Bone Intramedullary Pegs in Fractures of Long Bones. C. Davidson and F. Christopher, Chicago.—p. 534.
Management of Cicatricial (Benign) Strictures of Esophagus. P. P. Vinson, Rochester, Minn.—p. 543.
Cystograms: Clinical Application and Possible Misinterpretation. H. C. Bumpus, Jr., Rochester, Minn.—p. 546.
*Skate in Fractures of Lower Extremity. R. M. Yergason, Hartford, Conn.—p. 550.
Methods of "Finishing" Plaster-of-Paris Cast. P. Lewin, Chicago. —p. 554
Small Deep Skin Graft. O. C. Cassegrain, New Orleans.—p. 557.
*Operation for Correction of Procidentia or Marked Cystocele and Rectocele. N. D. Morgan, San Francisco.—p. 559.

Cause of Chronic Duodenal Stasis.—The position of the distal portion of the duodenum behind the root of the mesentery, in McKenty's opinion, is not well suited to either the erect or dorsal posture. As a consequence of compression at this point, duodenal stasis, of a degree sufficient to cause symptoms, results and constitutes a definite clinicopathologic entity, of more common occurrence than symptom-producing nephroptosis. The drag on the mesentery of the small intestines by a loose cecum prolapsed into the pelvis is, by far, the most common cause. As to treatment, McKenty says: Suspension of cecum, ascending colon and hepatic flexure adequately meets the indications and gives satisfactory results in the great majority of cases. Duodenojejunostomy should be restricted to the more extreme cases of dilatation and to those in which the cause of the mesenteric compression cannot be discovered and removed.

Premature Separation of Placenta.—Scott reviews the literature and reports three cases. He believes that mild cases of premature separation of the normally implanted placenta are more frequent than is commonly believed. Etiologically, this type of hemorrhage can be classified as toxic and traumatic, the latter being in the minority. Mild toxemias are capable of producing small areas of infarction with resultant mild hemorrhages, with little discomfort to the mother, but fatal to the baby. Approximately the same toxemias of pregnancy resulting in eclampsia are responsible for a premature separation of the placenta. Expectant treatment should be resorted to in all mild cases. In extreme concealed hemorrhages, the treatment should be surgical, preferably cesarean section.

Nontuberculous Pulmonary Abscess.—The etiology in the last 100 cases seen by Whittemore could be established definitely in all but eight. In sixty-six cases there had been an operation on the upper respiratory tract under general anesthesia, directly preceding the lung infection. In forty-eight cases tonsils had been removed; in twelve cases teeth extracted; in two cases septic sinuses drained; in one case adenoids had been removed; in one a deviated septum straightened; in one a broken nose operated on and in one a tracheotomy had been performed. Pneumonia was the cause of the abscess in twenty-two cases (bronchopneumonia occurring twenty times and lobar pneumonia twice). Septic infarct was the etiologic factor in three instances and a bronchial esophageal fistula in one case. From 10 to 30 per cent. of the cases may be cured by expectant treatment. Artificial pneumothorax may cure a very small number of cases in which the lung and costal pleura are not adherent, and bronchoscopy may cure a very limited number if treatment is established early. Surgery offers an excellent chance for cure in cases in which other methods of treatment have failed or are unsuitable.

Papilloma of Female Urethra.—Kreutzmann has been able to demonstrate multiple papillomas in the urethra in forty cases with no associated growths elsewhere in the urinary tract. Contrary to the statement of Luys, the growths occurred in the posterior urethra. Only 50 per cent. of the cases showed pus cells in the catheterized specimens of bladder urine. The same number gave positive cultures. *Bacillus coli* was the most common organism found. In 42 per cent. of the cases there was a history of previous cystitis, which in some patients had lasted many years and in others had recurred intermittently up to the time of examination.

Lymph Node Involvement in Carcinoma of Intestine.—There was glandular involvement in twenty-three of the thirty-six cases of carcinoma of the small intestine reviewed by Craig. The size of the growth cannot be relied on as an accurate index of the probable lymphatic involvement; neither can the history of duration of symptoms indicate the extent of metastasis. Metastatic involvement of the lymph glands can be determined definitely only by systematic microscopic study of all regional lymph nodes.

Hydatid Cyst of Spleen.—Mills records four cases of hydatid cyst of the spleen, making a total of sixteen cases that have been reported in the literature of North America to date. He also presents brief abstracts of fifty cases, of which thirty-three have been reported since 1900.

Obstruction and Infection of Ureter.—Smith calls attention to the frequent occurrence and congenital aspect of ureteral lesions and points out the regularity with which ureteral obstruction in some degree can be demonstrated in these cases of upper urinary tract disease, whether a hydronephrosis, a pyelitis, a pyelonephritis or a pyelonephrosis.

Ventral Tumors of Sacrum.—Nineteen proved cases of tumors ventral to the sacrum are reviewed by Hundling. These tumors of the sacrum seldom metastasize, but cause death by infiltration. Pain, resembling sciatica, and constipation are often the only symptoms. Treatment consists of the removal or scraping out of the tumor, followed by extensive radium radiation.

Skate in Fracture of Lower Extremity.—Yergason described a skate that has been used successfully by himself and others to control absolutely the position of the foot and to maintain traction without conflicting in any way with the dressings and cleanliness of the wounds.

Operation for Procidentia.—The operation devised by Morgan is said to be especially adapted to patients who have passed the menopause. The tubes and ligaments are separated from the uterus as is done in performing hysterectomy. The bladder is dissected back and the peritoneum on the posterior wall of the vagina is dissected off down to the bottom of the culdesac. The uterus is freed from all its moorings except inferiorly where it is still attached to the superior vagina. The uterus is held anteriorly while the two free ends of the round ligaments are sewed together behind the uterus, but the uterus is still left free. The uterus is pulled up, thus taking up the slack in the vaginal walls, and with a long piece of chromic gut on a curved needle in a long holder a good substantial "bite" is taken in the fascia at the bottom of the culdesac between the freed peritoneum and the posterior vaginal wall, and another "bite" is taken in the fundus of the uterus. When the suture is tightened the fundus of the uterus will be attached to the culdesac fascia, the uterus thus undergoing, as it were, a complete retroversion riding upon the connected round ligaments as its fulcrum. In doing this the vaginal walls are pulled up tightly because the uterus is here used as a lever against a strong and firm fulcrum (the connected round ligaments). The peritoneum is sewed over the uterus to the peritoneum of the bladder as in hysterectomy.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

8: 145-208 (April) 1924

Color Rings, Druault's Test and Lens Disturbance. P. Smith.—p. 145.
Lacrymal Passages in Guinea-Pig and Rabbit. Záboj-Bruckner.—p. 158.
Lupus of Lacrymal Sac. R. R. James and L. Colledge.—p. 165.

British Medical Journal, London

1: 507-558 (March 22) 1924

*Hyperpiesia and Arteriosclerosis. H. B. Shaw.—p. 507.
*Treatment of General Paralysis. J. Purves-Stewart.—p. 508.
Substitutes for Cocain. H. H. Dale.—p. 511.
*Comparative Study of Abdominal Incisions. A. H. Southam.—p. 513.
*Abdominal Incision in Pelvic Surgery. W. E. Fothergill.—p. 515.
*Effect of Insulin on Sugar Content of Arterial and Venous Blood in Diabetes. R. D. Lawrence.—p. 516.
Meckel's Diverticulum Strangulated in Femoral Hernia. R. M. Littler.—p. 517.

Hyperpiesia and Arteriosclerosis.—Shaw protests against the use of the terms "arteriosclerosis" or "arteriocapillary fibrosis" to describe altered states in the walls of blood vessels because they are not clinical but pathologic terms used to describe conditions in which fibrosis affects the walls of an artery in toto or in part. Two forms of arterial disease which may be recognized clinically are: (*a*) hyperpiesic and occupational tortuosity and hardening due to hypertrophy of the media, and (*b*) tortuosity and, maybe, hardening independent of hyperpiesia and occupation, but due to infection which causes formative inflammation of the coats of the artery, as shown by cellular proliferation and by cellular exudation. Other forms of arterial changes which may defy clinical detection are arterial degeneration affecting the intima (atheroma) and degeneration affecting the media. Shaw feels that clinicians can get on quite well without the use of the term "arteriosclerosis."

Arsphenaminized Serum in the Treatment of General Paralysis.—The improved plan which Purves-Stewart has adopted to supplement malarial inoculation in the treatment of general paralysis is to introduce the arsphenaminized serum directly into the cisterna magna and roof of the fourth ventricle by means of a suboccipital or cistern puncture, according to the technic of Wegeforth, Ayer and Essick. Serum introduced in this situation flows forward with the current of cerebrospinal fluid to the basal cistern and thence upward to the cortical subarachnoid space, directly reaching the diseased cortical areas. Weekly intravenous injections of arsphenamin with fortnightly intracisternal injections of arsphenaminized serum are carried out systematically. Daily mercurial treatment by the mouth is also given throughout. The cerebrospinal fluid and blood are examined at every injection, and the treatment is continued not only until the symptoms, physical and mental, have cleared up, but until the cerebrospinal fluid becomes normal, as evidenced by the disappearance of pleocytosis and by a negative Wassermann reaction.

Abdominal Incision for Lesions in Upper Zone.—In urgent operations on the upper abdomen the quickest and easiest approach, in Southam's opinion, is by a muscle splitting incision passing through the inner third of the rectus muscle. This affords good access in cases of perforated gastric or duodenal ulcer and in acute cholecystitis, and avoids injury to the nerve trunks situated at the lateral border of the rectus abdominis.

Abdominal Incision for Pelvic Conditions.—Fothergill regards the incision in the midline below the umbilicus as the best for gynecologic work. It might also be used with advantage by general surgeons when the diagnosis is not clear—as, in cases of appendicitis and diverticulitis complicated by the results of infection of the pelvic organs—for the median incision cannot injure the muscle or the fascia as the lateral incison may do. It gives better access to both sides of the lower abdomen, and it can be extended upward as may be desired. Furthermore, it gives the opportunity for improving the patient's abdominal wall in all women whose recti lie far apart.

Effect of Insulin on Blood Sugar Content.—Lawrence has found the normal postoperative difference in arterial and venous blood sugar to be much reduced in diabetes. Higher venous than arterial figures may occasionally be found in severe diabetes. Insulin increases the arteriovenous difference and approximates it to the normal. From this Lawrence concludes, that whatever part the liver and other organs play, insulin acts largely in the muscles or general tissues, or both.

China Medical Journal, Shanghai

38: 85-168 (Feb.) 1924

Problems of Pediatrics in China. J. Hammond.—p. 85.
*Treatment of Abscess of Liver by Aspiration and Subcutaneous Injections of Emetin. A. I. Ludlow.—p. 93.
Accidents in Cataract Operations. C. A. Hayes.—p. 102.
After-Treatment of Cataract Extraction. D. V. Smith.—p. 105.
*Incidence of Rickets in Peking; Efficacy of Treatment with Cod Liver Oil. E. Tso.—p. 112.
*Case of Congenital Malaria. C. G. Trimble.—p. 121.
*Case of Phosphorus Poisoning. V. Vogt.—p. 123.
*Vitamin C in Sweet Potatoes. E. C. Peck.—p. 125.

Aspiration of Liver Abscess.—In ten cases cited by Ludlow aspiration proved successful. Furthermore, these cases emphasize the fact that a large liver abscess may be present with practically normal pulse, temperature, respiration and blood count.

Incidence of Rickets in Peking.—Rickets, supposedly rare in China, has been found by Tso to be a not uncommon infant malady in Peking. In four months there have been observed at the Peking Union Medical College Hospital twenty-eight cases of clinical rickets, of which at least fifteen were so well marked as to show definite and, in several instances, extensive rachitic lesions in roentgenograms taken of the wrist, knee or ribs. Clinical and roentgen-ray studies of cases treated have demonstrated that the use of cod-liver oil in the treatment of rickets is not only rational but remarkably effective.

Congenital Malaria.—Cases of intra-uterine infection with the malarial parasite are said to be very rare. In Trimble's case the child manifested symptoms of malaria the tenth day after birth. The infection may have been transmitted to the infant by mosquitoes, but as the mother had an attack of malaria the day before delivery, the case is reported as one of congenital malaria. Malarial parasites, asexual, were found in large numbers. The spleen was easily palpated about 1 inch below the costal margin. Hypodermic injections of 2 grains of quinin bihydrochlorid were given on the twenty-fourth, twenty-fifth and twenty-sixth days. No fever developed on those days. Thereafter the infant was given 4 grains of quinin by mouth daily for about three weeks. The mother had received about 30 grains of quinin a day for three days, twice, during the last month of her pregnancy. The infant did not get enough of the drug either through the placenta before birth, or through the milk after birth, to rid it of malarial parasites.

Phosphorus Poisoning.—Vogt reports the case of a Chinese who attempted to commit suicide by swallowing the tips of all the matches contained in six boxes. The total amount of phosphorus taken was from 0.2 to 0.3 gm., which was sufficient to provoke a nephritis, from which the man recovered in a fortnight.

Vitamin C in Sweet Potatoes.—Peck found that 10 gm. of raw peeled sweet potato is amply sufficient to furnish enough vitamin C each day to prevent and cure scurvy in a guinea-pig. A daily dose of 5 gm. gave doubtful results.

Journal of Biochemistry, Tokyo

3: 169-281 (Jan.) 1924

Chemical Studies of Corn Pollen. II. Carbohydrates and Organic Bases. S. Miyake.—p. 169.
Lethal Temperature of Pure Koji Diastase and Recovery of Action After Heating. K. Miyake and M. Ito.—p. 177.
Dispersity and Surface Tension of Blood Serum. T. Tadokoro.—p. 195.
Influence of Protein and Fat in Diet on Carbohydrate Metabolism. N. Kageura.—p. 205.
Catalytic and Oxidative Activity. T. Kimura.—p. 211.
Ripening of Kaki Fruit. V. S. Komatsu and M. Ishimasa.—p. 261.
Glycolytic Power of Blood. Y. Kawashima.—p. 273.

Journal of Tropical Medicine and Hygiene, London

27: 61-72 (March 15) 1924

*Medical Mycology. A. Castellani.—p. 61.

Many Fungi Cause Thrush.—Castellani emphasizes that thrush is not caused by one species of fungus only, the so-called thrush fungus or *Oidium albicans* Robin, as generally stated. It is caused by a number of different fungi, some of which are botanically very far apart, and belong to separate species, genera and families. The term "thrush" covers in reality a group of clinically similar conditions, rather than one only; two types may be distinguished clinically, the white or grey-white type, extremely common, and the yellow or yellow-brownish type, of rarer occurrence.

Lancet, London

1: 633-686 (March 29) 1924

*Vitamins: Borderland Between Health and Disease. W. Cramer.—p. 633.
*Communication Between Vagus and Cervical Sympathetic. R. C. Shawe.—p. 640.
Mental Conditions in Sexual Offenders. M. H. Smith.—p. 643.
*Epidemic Encephalitis with Painful Abdominal Spasm. A. J. Hall.—p. 646.
Speech Clinic. E. W. Scripture.—p. 647.
*Uncommon Conditions Associated with Liver Lesions. F. J. O'Donnell.—p. 648.
Case of Intraperitoneal Ovarian Pregnancy with Full Term Child. S. Suvansa.—p. 648.

The Necessity for Vitamins.—Cramer is convinced that a misconception of the mode of action of vitamins has led to underestimation of the importance of these substances in nutrition, even by many ardent supporters of the vitamin theory. The borderland between health and disease, the borderland created by a restriction in the intake of vitamins, has remained unexplored. Experiments on animals have demonstrated that a highly differentiated organism requires for full development a maximum supply of vitamins especially during the early period of life. Any restriction of this supply leads to an imperfect development without necessarily producing obvious disease or ill health and without even preventing the process of reproduction. The result is an undersized, ill-bread population with a diminished resistance to disease. Cramer, who has followed this line of work experimentally with rats a long time, believes that vitamins have a positive physiologic action corresponding to the action of hormones. There are specific pathologic lesions produced when vitamins are withheld from the food, and these lesions account for the onset of the specific deficiency disease. The need for these food hormones is greatest immediately after birth and in the first few years of life when the organism is adapting itself to new environment and when the tissues which are stimulated functionally by the food hormones assume their functions. This conception has a therapeutic application not confined to the deficiency diseases.

Communication Between Vagus and Cervical Sympathetic.—Shawe describes some connections which pass between the inferior and middle cervical sympathetic ganglia and the vagus nerve with its branch, the recurrent laryngeal—including their detailed distribution, which appear to have hitherto escaped particular notice—and draws attention to the clinical aspects of these associations. From the clinical side it appears that the importance of these vagosympathetic fibers depends on their two main spheres of distribution: (1) to the cardio-aortic region, and (2) to the thyroid gland. In the former association they mediate, at least in some cases, as shown by the success of Jonnesco's operation, the critical nervous impulses of angina pectoris, transmitting the afferent stimuli from the heart and aorta, and very probably transmitting efferent stimuli to that region. These nerves form a concentration point for the sympathetic cardiac fibers from the upper dorsal segments, and as such present a readily accessible isthmus at which to attack the vicious cycle of irritation by surgical methods. In the latter association these same communicating nerves probably mediate secreting fibers to the thyroid, and it is the pathologic hyperexcitability of such fibers which may form a most important etiologic factor in the production of exophthalmic goiter; consequently, in suitable cases, in association with the other cervical sympathetic ganglia, their extirpation would appear to be justified in this disease as judged by the results of Jonnesco's work.

Epidemic Encephalitis with Painful Abdominal Spasm.—Abdominal myoclonus has been noted by Hall as a very prominent symptom in an epidemic of encephalitis. Although any muscle may be involved, in all cases which Hall has seen the spasm has been either in the upper part of the rectus abdominis, either one or both sides, or in the left external oblique. The spasms recur at frequent intervals. They vary in depth and in regularity. In cases in which both the upper recti are involved the spasms may be, and often are, synchronous, but they may alternate, first one side then the other contracting. These cases, in which there is apparently nothing else than the painful abdominal myoclonus (the algomyoclonus of Cruchet), are identical with other forms of the disease. As a matter of fact, Hall found that almost every case in which the myoclonus was present showed on careful inquiry or full examination quite definite stigmata of the disease.

Severe Valvular Lesion and Cirrhosis of Liver in Child.—One of the cases cited by O'Donnell was chiefly of pathologic interest in view of the intense widespread inflammation of the valves of the heart and the extreme cirrhosis of the liver in a child of 8. The symptoms simulated those of a severe toxic peritonitis.

Medical Journal of Australia, Sydney

1: 201-224 (March 1) 1924

Neurasthenia, Hysteria and Epilepsy. J. Macpherson.—p. 201.
Early Arteriosclerosis. J. Bostock.—p. 204.
*Serologic Investigation in Suspected Typhoid Fever. F. M. Burnet.—p. 205.
New Aspects of Respiration. W. A. Osborne.—p. 208.
Myxedema with Family History of Endemic Goiter. J. Bostock.—p. 213.

SUPPLEMENT

Focal Infection. R. S. Skirving.—p. 67.
Rôle of Focal Infections in Disease. S. O. Cowen.—p. 68.
Etiology of Goiter. S. Pern.—p. 70.
Exophthalmic Goiter and Toxic Adenoma of Thyroid Gland. A. Newton.—p. 73.
Treatment of Exophthalmic Goiter. H. B. Devine.—p. 75.
Treatment of Exophthalmic Goiter from Ophthalmologic Point of View. H. R. Stanley.—p. 79.
Treatment of Exophthalmic Goiter. H. H. Turnbull.—p. 79.
Fractional Test Meal. F. L. Apperly.—p. 83.
Epidemic Encephalitis. J. B. Cleland.—p. 87.

1: 225-250 (March 8) 1924

Urethral Gonorrhea in the Male and Pregnancy. P. Fiaschi.—p. 225.
National Insurance as Affecting the Medical Profession. J. N. Morris.—p. 227.
Blood Urea and Nitrogen Output of Students. H. Priestley and E. M. Hindmarsh.—p. 234.
General Edema of Fetus. W. M. A. Fletcher.—p. 235.

Agglutination Test for Typhoid.—The test employed by Burnet consists in a comparison of the agglutination titers shown by the suspected serum with two differenet emulsions of *Bacillus typhosus*. One of these was a standard diagnostic emulsion. The other was prepared as follows: *Bacillus typhosus* was subcultured in normal broth daily for three or four generations and a few drops of a twenty-four hour culture was used to inoculate 40 or 50 c.c. of broth containing 1 per cent. of ammonium oxalate at p_H 7.4. After twenty-four hour growth at 37 C. the culture was centrifugalized. The bacilli were reemulsified in saline solution (0.85 per cent.) containing 0.1 per cent. liquor formaldehydi and the emulsion was adjusted to standard opacity. The presence of "R" (oxalate broth) agglutinin in easily demonstrable amount occurs only in cases of recent or existing typhoid septicemia and in a majority of such cases the "R" agglutinin appears in quantity before much "S" (standard) agglutinin is present. The serum of persons inoculated subcutaneously with typhoid vaccine shows an insignificant or no development of "R" agglutinin.

South African Medical Record, Cape Town

22: 65-88 (Feb. 23) 1924

Construction of Artificial Dentures. S. H. Coplans.—p. 67.
Ancient Medicine. H. Greef.—p. 71.
Contagious Abortion and Malta Fever. L. J. J. Orpen.—p. 75.
Treatment of Anthrax. W. A. Carden.—p. 75.

Annales de Médecine, Paris

15: 97-200 (Feb.) 1924

Benzene Poisoning. M. Faure-Beaulieu and M. Lévy-Bruhl.—p. 97.
*Basal Metabolism in Adiposogenital Syndrome. Labbé et al.—p. 112.
*The Blood in Epilepsy. E.-J. Bigwood.—p. 119.
Anisocoria and Pulmonary Tuberculosis. W. Jullien.—p. 149.
Venous Septicemia. A. Cain and P. Oury.—p. 178.

Basal Metabolism in the Nonpituitary Adiposogenital Syndrome.—Labbé, Stévenin and Van Bogaert have been studying a special form of the adiposogenital syndrome in which the condition could not be traced to any morbid change in the pituitary body or its pedicle. There may be a form of the adiposogenital syndrome with involvement of merely the infundibulum-tuber zone, or even without this. In a number of cases no other cause could be discovered except arrested development of the sex glands. In ten cases described, the basal metabolism was found diminished, resembling that of hypothyroidism.

The Physical-Chemical Balance of the Blood in Epilepsy.—Bigwood emphasizes the importance of differentiating true epilepsy from other forms. He found that there can be distinguished a nonconvulsive form without alkalosis, then a type with convulsions and alkalosis, and, finally, a type with convulsions without alkalosis. This latter is not genuine epilepsy at all. This group comprises syphilitic, schizophrenic, jacksonian and traumatic forms of convulsions. Thus it seems to be an established fact that when essential epilepsy occurs, with convulsions, it is due to a spasmogenic toxin launched into the blood by a periodical tissue alkalosis. When the epilepsy occurs in the form of nonconvulsive manifestations, such as absences, fugues, ambulatory automatisms or somatopsychic equivalents, then no blood alkalosis can be detected.

Archives des Maladies de l'App. Digestif, Paris

14: 101-196 (Feb.) 1924

*Diagnosis of Diabetic Coma. M. Labbé.—p. 101.
*Oculogastric Reflex. D. Daniélopolu and A. Carniol.—p. 110.
Gastrocolic Fistula from Cancer. Le Noir et al.—p. 123.
*Digestive Disturbance from Carbohydrates. Roux and Goiffon.—p. 135.

Diagnosis of Diabetic Coma.—Labbé reviews various premonitory signs of diabetic coma. Lack of appetite which follows the previous hunger, rapid loss in weight, somnolence, dyspnea, cold hands and feet, which are pale and somewhat cyanotic, and pains in the epigastrium are frequent. Vomiting and diarrhea occur. Nephritis may complicate diabetes and cause uremia. There is no diabetic coma without large amounts of acetone bodies in the urine.

Oculogastric Reflex.—Daniélopolu and Carniol found that compression of the eyeballs inhibits the movements of the stomach. It is sufficient to apply a lighter pressure than for the oculocardiac reflex.

Digestive Disturbance from Carbohydrates.—Roux and Goiffon discuss the digestion of carbohydrates. They emphasize the rapid amylolytic action of the saliva: Chewing 3 gm. of bread for three minutes produces 0.4 to 0.5 gm. of maltose. The action continues sometimes for an hour or more in the stomach, because the acid juice does not penetrate quickly into the interior of the food. Pancreatic juice is activated by the saliva, the action of which had been stopped by the hydrochloric acid. Examination of the stools does not give very reliable indication of the digestion of carbohydrates unless the time of passage is normal and no abnormally strong fermentation or putrefaction has occurred. As a rule, up to 300 or 400 gm. of mashed potato may be eaten daily before iodin detects undigested starch. Disturbance in digestion of carbohydrates gives rise to a strong fermentation and consecutive painful typhlitis, colitis and diarrhea. In such conditions, carbohydrates should be given in small amounts and in the most digestible form (sugar, dextrinized starch). One or two teaspoonfuls of calcium carbonate between meals are very efficient in pains and diarrhea. It is important, however, that the chalk used should be light and fine as flour.

Bulletin de l'Académie de Médecine, Paris

91: 335-393 (March 18) 1924

Transposition of Ovary into Uterus. Tuffier and Letulle.—p. 362.
Bone Grafts. L. Imbert.—p. 371.
Renal Calculi. P. Bazy.—p. 375.
*Tubal Abortions. F. Lejars.—p. 377.
Surgery of Horse-Shoe Kidney. F. Legueu.—p. 379.
Perituodenitis. P. Duval.—p. 381.
Influence of Exertion on Heart and Lungs. B. du Coteau.—p. 383.
Energy Consumed in Muscular Work. P. Noguès.—p. 391.
Apparatus for Measuring the Pulse Rate. P. Noguès.—p. 392.

Tubal Abortions.—Lejars says that physicians have to learn more about diagnosing tubal abortions without rupture, since this condition is often mistaken for incipient uterine abortion or other affection. The differential signs are sudden, violent, unilateral pain; tenderness on one side during bimanual examination, and persistent oozing of blood, quite different from the gush with uterine abortion. Laparotomy is always indicated for threatening hemorrhagic anemia. In his 113 operative cases, four of the women died on account of extreme weakness from loss of blood.

Bulletins de la Société Médicale des Hôpitaux, Paris

18: 353-382 (March 21) 1924

Aneurysm of Pulmonary Artery. M. Leconte and E. Bordet.—p. 353.
*Adenitis from Serotherapy. Pasteur Vallery-Radot.—p. 358.
Carbon Monoxid Amaurosis. F. Rathery and J. Gournay.—p. 359.
Crossed Hemiplegia Due to Generalized Atheromatosis. P. Menetrier and J. Surmont.—p. 360.
Diagnosis of Tuberculous Cavities. De Jong and Pestel.—p. 365.
Influence of Ascites on Glycosuria. Loeper and Turpin.—p. 375.
The Future of Pleuritics. Brelet.—p. 380.

Adenitis from Serotherapy.—Vallery-Radot calls attention to the fact that, according to his observation, generalized adenitis is often liable to occur after injection of an antiserum, associated or not with an antiserum exanthem.

Comptes Rendus de la Société de Biologie, Paris

90: 601-660 (March 14) 1924. Partial Index

*Excretion of Phosphorus by Shiga Bacillus. E. Pozerski.—p. 602.
Weight of Children of Tuberculous Mothers. H. Vignes.—p. 604.
A Soluble Urease. G. Humbert.—p. 607.
*Influence of Weight of Arms. P. Godin.—p. 609.
*Phonetic Test in Diagnosis. H.-J. Frossard.—p. 614.
Experimental Diabetes and Glycemia. H. Bierry et al.—p. 615.
Venous Tension in Cirrhosis. M. Villaret et al.—p. 620.
Bacteriophage of the Pneumobacillus. P. Caublot.—p. 622.
*Vasomotor Action of Amino-Acids. L. Brouha.—p. 634.
Action of Amino-Acids on Metabolism. L. Mélon.—p. 636.
Dosage of Glucose. P. Spehl.—p. 638.
Lysis of Killed by Living Staphylococci. Gratia and Rhodes.—p. 640.
Immunity and Anaphylaxis in Isolated Heart. P. Mendeleeff and G. Hannevart.—p. 642.
Agglutination When Resistant to Bacteriophagy. Brutsaert.—p. 645.
Bacteriophage in Oversalted Bouillon. P. Brutsaert.—p. 646.
Mechanism of Endo's Reaction. L. Muller.—p. 653.
Surface Tension of Plasma in Anaphylaxis. Zunz and La Barre.—p. 658.

Excretion of Phosphorus by the Shiga Bacillus.—Pozerski describes the property of Shiga bacilli to excrete phosphorus compounds when they are grown on solid mediums and are transferred to distilled water. The age reduces this faculty. Desiccated mediums enhance phosphorus production.

Arm Growth and Respiration.—Godin contends that proportionally to the growth of the upper extremities, there occurs a primary respiratory reduction in boys at puberty. However, it is secondarily compensated by a relative enlargement of the entire neck musculature.

"Duration Test" of Vocal Sounds.—Frossard comments on his phonodiagnostic method to differentiate normal and pathologic conditions in the pulmonary or peripulmonary tissues. A normal person can easily maintain a vocal sound by an expiration lasting about thirty-five seconds. If the subject is not able to reach a "vocal duration" of at least fifteen seconds, this is always a sign of respiratory insufficiency.

Vasomotor Action of Amino-Acids.—Brouha has been studying the effect of glycocoll, alanin, leucin and valin on isolated organs of dogs, by injecting these substances in the artificial circulation of surviving organs. The experiments proved a marked vasodilatation.

Journal de Radiologie et d'Electrologie, Paris

8: 49-96 (Feb.) 1924

*Intramuscular Radioactive Treatment. N. Dobrovolskaia-Zavadskaia.—p. 49.
Protection Against Distant Action of Roentgen Rays. I. Solomon.—p. 62.

The Effect of Intramuscular Radioactive Foci.—The experiments with rabbits reported here prove that direct intramuscular irradiation through a radium needle causes concentric focal changes in the striped muscle. There may be a well differentiated zone of necrosis surrounding a focus of atrophy.

Journal d'Urologie Médicale et Chirurgicale, Paris

17: 97-176 (Feb.) 1924

*The Gaping Ureter. G. Gayet and J. Rousset.—p. 97.
Diagnosis of Renal Tuberculosis. S. Rolando.—p. 134.
Perirenal Gonococcus Phlegmon. L. Strominger.—p. 139.

The Gaping Ureter.—Gayet and Rousset describe a pathologic condition consisting in a permanent dilatation of the ureter. This disturbance is frequent, and may be traced to various etiologic factors. The main cause is probably spastic contraction of the bladder, also inflammatory processes and, finally, at least in a certain number of cases, heredity. It should not be omitted that injecting caustic fluids into the bladder for therapeutic purposes may facilitate the development of the gaping condition. The diagnosis is very simple by cystoscopy, roentgenoscopy and stain-passage tests. There is nothing to prevent the contents of the bladder from regurgitating into the ureter and causing pyelitis by ascending infection. Thus, if one kidney is irreparably infected, nephrectomy is indicated, while if both are attacked, nothing but simple lavages can be applied.

Paris Médical

237-268 (March 15) 1924

*Dermatology in 1924. G. Milian and L. Brodier.—p. 237.
Juxta-Articular Nodules. E. Jeanselme.—p. 242.
Norwegian Scabies. Dubreuilh and Sainte-Marie.—p. 251.
The Glass Compression Sign. J. Nicolas and M. Favre.—p. 255.
The Pigment in the Skin. A. Civatte.—p. 259.

Dermatology in 1924.—Milian and Brodier state that the topics of most prominent interest are desensitization of cutaneous affections, autohemotherapy in dermatoses, nevus cancers, and tuberculids. After theoretical classification of cutaneous phenomena due to colloid instability or anaphylaxis, they discuss calcium chlorid, sodium hyposulphite, peptone, and own blood treatment. Although autohemotherapy usually does not cause any untoward symptoms, yet a few instances of shock from it have been reported. For nevus cancers, electrolysis, the roentgen rays or surgical extirpation are advocated. Finally, reference is made to Ravaut's success in 1913 with arsphenamin treatment of tuberculids. The tendency is now to ascribe tuberculids sometimes to tuberculosis, sometimes to syphilis, and at times to even other origin. In view of the total lack of any histologic differentiating sign, the "tuberculoids" should be distinguished by study of the anamnesis.

269-284 (March 22) 1924

Modern Treatments of Diabetes. F. Rathery.—p. 269.
*Kala-Azar in Children. P. Giraud and J. Zuccarelli.—p. 278.
Sedimentation Test in Diagnosis and Prognosis. Gaehlinger.—p. 281.

Kala-Azar in Children.—Giraud and Zuccarelli hold that if chronic hypertrophy of the spleen be diagnosed and malaria and other common diseases causing enlargement of the spleen can be excluded, there is little doubt as to the probable presence of leishmaniasis. The Mediterranean form affects mostly children. The main clinical features are progressive anemia, bloated face, irregular fever and enormous enlargement of the spleen. It may reach down to the pelvis. The blood picture is also characteristic: There are no nucleated red blood corpuscles and no eosinophilia, but leukopenia has been observed. Puncture of the spleen is harmless, and clears up the doubtful diagnosis. In the five cases reported, three of the children died in spite of injection of tartar emetic intramuscularly or by the vein.

Presse Médicale, Paris

32: 265-276 (March 26) 1924

Roentgenology of Rickets. E. Lesné et al.—p. 265.
*Value of Artificial Pneumothorax. R. Burnand.—p. 267.
Improved Technic for Pubiotomy. I. Elgart.—p. 270.
*Carbon Monoxid Poisoning. Panis and Salmon.—p. 272.

Curative Value of Artificial Pneumothorax in Pulmonary Tuberculosis.—Burnand concludes partly from hospital statistics and partly from his own clinical experience at Leysin that artificial pneumothorax is a most efficient means for treating pulmonary tuberculosis. In a series of 237 cases (1912 to 1923) all the patients improved at the first trial and only eighty-two have died. One group of twenty patients shows that definite stabilization of the improvement may be expected only when the compression of the lung by the pneumothorax is maintained long enough. The time required averages about three years, and it must be emphasized that the pneumothorax does not preclude the necessity for general treatment of possible foci elsewhere than in the lung. A large number of the patients had their earning capacity fully restored. It is also important for prophylaxis because—as proved in forty-three persons—the sputum from the pneumothorax patients became sterile in from one to six months following the first compression of the lung.

Carbon Monoxid Poisoning and Oxygen Treatment.—Panis and Salmon report the case of a boy of 16 who, with suicidal intent, inhaled the gas from burning charcoal, inducing grave monoxid poisoning. After twenty-five minutes of artificial respiration, the boy started to breathe. The percentage of monoxidized hemoglobin was 66.7 at first and 50 after forty-five minutes of artificial respiration. Then inhalation of oxygen was begun, and in twenty minutes the signs of intoxication had disappeared, and in forty-five minutes the blood contained only traces of the carbon monoxid. The boy recovered.

Revue Franç. de Gynécologie et d'Obstét., Paris

19: 129-160 (March 10) 1924

*Shock Treatment of Menorrhagia. R. Slivinski.—p. 129.
Four Cases of Retroplacental Hemorrhage. Chabert et al.—p. 133.

Treatment of Menorrhagia by Anaphylactic Shock.—Slivinski found in eight cases of recurring profuse uterine bleeding that subcutaneous injection of normal serum checked the hemorrhagic tendency in five of the eight. The course was seven injections.

Revue Médicale de la Suisse Romande, Geneva

44: 129-208 (March) 1924

Iodin in the Food. H. Eggenberger.—p. 129.
Comparative Study of Digitalis and Strophanthus. Moukhtar.—p. 143.
*Syphilitic Meningitis After Arsenicals. Roch.—p. 149.

Syphilitic Meningitis After Arsenicals.—Roch reports six cases in which arsphenamin injections caused a temporary aggravation of the syphilis, since a specific meningitis developed. We must be prepared to meet such possible eventualities. After all, there is no danger of untoward complications if the arsenical treatment is given early enough and in satisfactory amounts. Even if specific meningitis should appear, arsphenamin is likely to cure it.

Schweizerische medizinische Wochenschrift, Basel

54: 273-296 (March 20) 1924

*Psychanalysis and Schizophrenia. M. Tramer.—p. 273.
The Heredity Question from Medicolegal Standpoint. Hey.—p. 280.
Myelogenous Plasmoma of the Spine. B. Walthard.—p. 285.
Congenital Cystic Kidneys as Obstacle to Delivery. Müller.—p. 288.

Dangers of Psychanalysis in Dementia Praecox.—Tramer calls attention to the pernicious introverting effect of psychanalysis on patients with a tendency to ideational and emotional dissociations. Thus it is important to restrict the indications for psychanalysis.

Archivio Italiano di Chirurgia, Bologna

9: 1-108 (Feb. 29) 1924

Tuberculous Uterine Myoma. D. Calzavara.—p. 1.
*Healing of Wounds Exposed to Sunlight. L. Torraca.—p. 19.
Appendicitis or Strangulated Hernia? De Gironcoli.—p. 31.
*Primary Sarcoma of Bone. L. Gobbi.—p. 73.
Malignant Adenoma of the Cecum. V. Baviera.—p. 97.

Behavior of Blood Vessels in Wounds Exposed to Sunlight—Torraca expatiates on the multiple effects from the sunlight as observed in wounds on rabbits. The diameter increases twice to four times the original size of the vessels, and the neoformation of vessels proceeds much more rapidly, and more and larger vessel loops are formed than in the controls. Granulation and healing are accelerated.

Primary Sarcoma of Bone.—Gobbi warns that a spontaneous fracture may be the first sign of the sarcoma in bone

tissue, but the majority of cases begin with spontaneous pain, persisting during repose. In 61 per cent. the sarcoma was in the leg, usually in the lower epiphysis of the femur or the upper epiphysis of the tibia. With a central, myeloid, giant-cell sarcoma, cures have been realized by merely cleaning out the cavity and plugging it with some neutral filling. Putti has been successful with this conservative treatment under these conditions.

Policlinico, Rome

31: 313-346 (March 10) 1924

*Diagnosis of Typhoid and Malaria. E. Fronticelli.—p. 313.
Mercuric Chlorid Poisoning by Vaginal Injection. Galante.—p. 315.
Echinococcus of Spleen. P. Duner.—p. 319.
*Estimation of Ascites. G. Galli.—p. 320.

Diagnosis of Typhoid and Malaria.—Fronticelli found the uro-erythrin reaction during fever valuable in the differential diagnosis of typhoid and malaria. He adds 2 to 3 c.c. of a 5 per cent. solution of neutral lead acetate to 5 to 6 c.c. of urine. A red precipitate speaks for malaria, while the color remains white or yellowish (or gray in severe cases) in typhoid. Pneumonia, liver affections and acute polyarthritis give a positive (red) reaction.

Level and Quantity of Ascites.—Galli demonstrates the fallacy of estimating the changes of the amount of ascitic fluid from its level. Measurements of the abdomen and the thorax and the weight of the patient are better indicators.

31: 347-380 (March 17) 1924

*The Baccelli Sign of Pleural Suppuration. G. A. Pari.—p. 347.
Tuberculous Process in Cecum Simulating Cancer. F. Cavina-Pratesi.—p. 350.
Inherited Versus Congenital Syphilis. D. Barduzzi.—p. 352.
*Diagnosis and Treatment of Gastro-Intestinal Disease. P. Alessandrini.—p. 354. Begun, p. 321.
"Influence of Calcium on Complement Fixation." Rapisardi.—p. 358. Reply. N. Pietravalle.—p. 359.

Aphonic Pectoriloquy.—Pari relates instances in which the whispered voice was transmitted through a purulent exudate in the pleura, thus refuting Baccelli's statement that such transmission is a differential sign of a serous, not a purulent, effusion. In Pari's paradoxic cases there had always been a preceding pneumonia, entailing a cavity or abscess or both, and thus induced mechanical conditions favoring pectoriloquy.

Gastro-Intestinal Disease.—Alessandrini declares that the aim should be the systematic study of all the elements allowing etiologic identification of the dyspepsia in the individual case. This alone is the guide for proper treatment, as he describes in specific instances.

31: 381-414 (March 24) 1924

*Arsenicals in Syphilis in Infants. G. Arata.—p. 381.
*Suicide with Formaldehyd. E. Vercalli.—p. 384.
Heredity in Cardiovascular Disease. L. Ferrannini.—p. 389.

31: 121-176 (March 15) 1924. Surgical Section

Experimental Exclusion of Loop of Duodenum. N. V. Bedarida.—p. 121.
Teratoid Tumor of Testicle. G. Petta.—p. 134.
Torsion of Pedunculated Lobe of Liver. P. Tasca.—p. 146.
Recent Works on Diverticulum of the Bladder. T. Laurenti.—p. 152.

Syphilis in Infants.—Arata expatiates on the efficacy and the harmlessness of arsenicals in treatment of inherited or acquired syphilis in infants. They should be given only subcutaneously and the dose kept well within the limit of tolerance. He never had any untoward by-effects with them.

Suicide with Formaldehyd Solution.—Vercalli's patient was a man of 42 who swallowed 300 gm. of a 40 per cent. solution of formaldehyd on an empty stomach. There was intense pain in the stomach but no vomiting. The stomach was rinsed out an hour after the ingestion of the fluid. There was considerable vomiting after this, with almost pure blood in the vomit and stools, but then the condition improved for four days when suddenly fever developed, with a violent cough and death in six hours. Necropsy confirmed that the spasm of the duodenum had kept the formaldehyd in the stomach; the intestines showed no signs of injury from it, and the changes in the kidneys were slight. Vercalli assumes that the elimination of the formaldehyd proceeded by the lungs, and the lung tissue was injured so severely by this that the acutely fatal toxic pneumonia terminated the clinical picture like an explosion as the formaldehyd accumulated in the lung tissue during the three days after the intake of the poison. There had been comparatively slight symptoms from the nervous system.

Riforma Medica, Naples

40: 241-264 (March 17) 1924

*Extirpation of the Liver. A. Perroncito.—p. 241.
Acquired Deformities. L. De Gaetano.—p. 242.
Technic of Ether Anesthesia. G. Maccaferri.—p. 247.
Treatment of Fracture of the Humerus. F. Viola.—p. 248.
Biologic Action of Thallium. P. G. Dal Collo.—p. 249.

Extirpation of the Liver.—Perroncito combined his method of extirpation of the liver in dogs with ligation of the vessels of the kidneys. He found an increase in the blood urea only in one dog, whose liver had not been completely removed. The uric acid content of the blood increased in all the animals, while it decreased if only the renal vessels were ligated.

Archivos Españoles de Pediatría, Madrid

8: 1-64 (Jan.) 1924

*Residual Brain Lesions in Children. Dámaso Rodrigo.—p. 5. Conc'n, p. 65.
Fight Against Congenital Syphilis. J. Velasco Pajares.—p. 40.

Residual Encephalopathies in Children.—Dámaso Rodrigo draws the clinical pictures resulting from residual processes in the cerebellum, cortex, striatum, pallidum or other parts of the brain, emphasizing the difficulty in distinguishing between a residual process and protracted forms of epidemic encephalitis. Generally speaking, cortical and cerebellar symptoms suggest an encephalopathy; symptoms from the midbrain are more common with recurring or protracted epidemic encephalitis than with encephalopathies, although some are common to both. With a positive Wassermann reaction in the lumbar puncture fluid and a negative benzoin reaction, the diagnosis of epidemic encephalitis is imposed.

8: 65-128 (Feb.) 1924

*Chronic Gastro-Intestinal Disturbances in Infants. R. Ulecia de la Plaza.—p. 90.
Fight Against Syphilis. A. R. Lozano.—p. 103.

Chronic Gastro-Intestinal Lesions in Infants.—Ulecia extols the promptly effectual action of van Swieten's solution, tabulating the details of 100 cases, out of his much larger experience, to illustrate the benefit from 10 or 20 drops daily, fractioned, never more than 30 drops at most. His list includes twenty breast-fed infants and sixty-five bottle-fed, with fifteen getting mixed feeding. The series does not include known syphilitic infants. He gives the solution for a week and then suspends for a few days. The age ranged from 15 days to over 3 years.

A. M. M., Mexico, D. F.

2: 1-72 (Feb.) 1924

*The Erythrocytes in Mexican Typhus. F. Ocaranza.—p. 4.
*Syphilitic Disease of the Spine. R. González Hurtado.—p. 16.
*Insulin. "Primum Non Nocere." C. Viesca y Lobatón.—p. 19.

The Erythrocytes in Mexican Typhus.—Ocaranza's twenty charts of typhus cases confirm the increase in the number of erythrocytes with increasing gravity of the disease. As improvement is observed, the number drops.

Syphilitic Vertebral Process Simulating Pott's Disease.—The roentgen rays apparently confirmed the diagnosis of a tuberculous process in the second lumbar vertebra, totally incapacitating the man, aged 30. No improvement was observed under six months of treatment on this basis. Then neo-arsphenamin was given a trial, 1.35 gm. being injected by the vein in one month, without benefit. The tuberculous nature of the process seemed thus confirmed, notwithstanding the positive Wassermann reaction, but under a course of intramuscular injections of a bismuth preparation, the earning capacity was soon restored, with the disappearance of all symptoms. The case confirms Levaditi's assertion that a certain form of syphilitic disease of the bones, resistant to the arsenicals, can be cured with bismuth.

Insulin.—Viesca y Lobatón comments on the principles of dietetic treatment of diabetes in managing a case with the aid of insulin. Otherwise, he says, we merely substitute the syringe for the sword of Damocles.

Gaceta Médica de Caracas

31: 1-16 (Jan. 15) 1924

*Cancer at Caracas. L. Razetti.—p. 1.
*Surgical Complications of Typhoid. A. D'Empaire.—p. 4.
The Dignity of the Medical Profession. L. Razetti.—p. 6.

History of Cancer.—Razetti states that a hospital for segregation of cancer cases was opened at Reims in 1740, as the contagious character of malignant disease was then accepted. The thirteen questions of the questionnaire prepared by the London Society for Investigating the Nature and Cure of Cancer in 1801 are still waiting for answers except possibly the last question "Is a spontaneous cure of cancer possible?" Over 62 per cent. were inoperable of the 141 cases of cancer in his hospital service, and he states that the majority of these patients say that although they had been under treatment from almost the first sign of disturbance, yet their physician had not warned them of the possibility of cancer. One woman had been treated for "dyspepsia" alone, no one examining the genital organs, the seat of an ulcerating cancer, until metrorrhagia developed. He urges examination of the genitals whenever a woman applies for treatment for any malady whatsoever.

Surgical Complications of Typhoid.—D'Empaire operated in a case of typhoid in a boy on the diagnosis of acute peritonitis from perforation in the gallbladder. He sutured the gallbladder to the skin and drained, and the typhoid proceeded to recovery although with a protracted course. The perforation occurred the thirty-second day. The shock did not seem so intense as with perforation of the bowel in typhoid. In another case the sudden pain in apparent health was ascribed to appendicitis, but laparotomy revealed perforation of the bowel in unsuspected typhoid, with fatal peritonitis.

Repertorio de Medicina y Cirugía, Bogota

15: 121-168 (Dec.) 1923

*Leprosy. R. F. Parra and J. E. Santos.—p. 124.
Code of Ethics Adopted by Academy of Medicine.—p. 138. Conc'n.
*Child Mortality at Bogota. E. Enciso.—p. 144.
*Puncture of Lateral Ventricle in Hydrocephalus. M. A. Rueda V.—p. 153.
Dyspepsia of Alimentary Origin in Children. J. G. Escallón.—p. 155.

Treatment of Leprosy.—Parra and Santos in applying the chaulmoogra ester treatment in 700 cases, found that the most appreciable and durable benefit was realized in young and well nourished subjects with recent leprosy of the nodular type. Their year of experience with the treatment has shown no case of actual cure, but the progressive improvement observed may continue to complete recovery in time. The bacillus has not been banished completely in any instance to date. The various preparations used seemed to be equally potent and well tolerated by young and old.

Infant Mortality at Bogota.—Enciso warns that the infant mortality at Bogota in 1920 was ten times that of Pittsburgh, and was more than twice the death rate for infants at Buenos Aires, which, he says, was lower than at Buffalo for that year.

Puncture of the Lateral Ventricle for Hydrocephalus.—Rueda states that the diameter of the head of the boy, aged 3, became reduced by 4 cm. within twenty days after puncture of the corpus callosum. The fluid spurted under high pressure, 75 gm. thus escaping. Inherited syphilis was evidently a factor, but no benefit had followed specific treatment.

Semana Médica, Buenos Aires

1: 403-458 (March 6) 1924

*Treatment of Hookworm. Destéfano and Vaccarezza.—p. 403.
*Ascarid Ileus. Carlos Lagos García.—p. 413.
Peritonitis at Appendectomy. G. E. Vaquié.—p. 425.
*Splanchnoptosis. F. A. Gallino and S. Gonzalez.—p. 426.
Correlation Between Stomach and Kidneys. J. R. Goyena.—p. 448.
Inflammatory Tumor Complicating Pyloric Ulcer. Palacios.—p. 452.

Carbon Tetrachlorid in Treatment of Hookworm.—Destéfano and Vaccarezza summarize their experience with thirty-eight cases. A microscopic cure was realized in 60 per cent. of the cases; they had never been able to obtain more than 30 per cent., with chenopodium. They warn against its use for hard drinkers, or with transient or permanent insufficiency of the liver.

Ileus from Ascarids.—Lagos García remarks that obstruction of the bowel from a clump of ascarids entails a peculiarly grave prognosis in young children; even prompt laparotomy may be followed by fatal collapse from toxemia. In one girl, aged 3, the helminths packed the intestine for 80 cm., and the child did not survive the extensive resection required. In future he intends to suture the bowel, above the obstruction, to the skin, and not proceed further until the child has recuperated from the shock. In one boy of 5 santonin proved successful. The three other children died.

Sagging Spleen.—Gallino and Gonzalez describe a number of different clinical pictures for which ptosis of the spleen is responsible but which are liable to be mistaken for other pathologic conditions. Measures to tone up the muscles, dieting, and a mechanical support are indicated. He applies the mechanical support in the Trendelenburg position, using a large inflatable pad held in place with a tight broad bandage. When the pad is not properly applied, it only aggravates the tendency to ptosis. Organotherapy is indispensable as the entire endocrine system usually suffers in sympathy. Even if operative measures should become necessary, the medical measures are indicated just the same.

Beiträge zur klinischen Chirurgie, Tübingen

130: 495-710, 1924

Pathology of the Femoral Epiphyses. A. Nussbaum.—p. 495.
Rare Causes of Pylorospasm. F. Merke.—p. 541.
*Thrush Fungus and Gastric Ulcer. F. Merke.—p. 549.
Complications with Artificial Anus. P. Neuhöfer.—p. 567.
Success and Failure with Splenectomy. A. Weinert.—p. 582.
Atrophy of Prostate Treated by Slitting Neck of Bladder. Shen.—p. 606.
Congenital Folds on the Verumontanum. H. Bronner.—p. 632.
Köhler's Disease. M. Meyer.—p. 655.

Thrush Fungus and Gastric Ulcer.—Merke has observed that chronic gastric ulcers provide an excellent habitat for the oïdium. He declares that it is wrong to assume that the thrush fungus is innocuous. It must be regarded as an important factor in the persistence of the ulcer, and, exceptionally, in grave complications such as vascular arrosions and perforation.

Deutsche medizinische Wochenschrift, Berlin

50: 293-326 (March 7) 1924

Roentgen Examination of the Aorta. T. Deneke.—p. 293.
*Thermoregulation. R. Plaut.—p. 296.
*Roentgen Rays in Cancer. F. Kok.—p. 298.
*Eye Disturbances in Alcohol Intoxication. W. Runge.—p. 298.
Fracture of Radius. Braatz.—p. 302.
Treatment of Lupus Erythematodes. H. Sieben.—p. 304.
*Epidemic Gangrene of External Sex Organs. W. K. Stephansky.—p. 305.
Dermatologic Treatment. M. Joseph.—p. 307. Conc'n.
Diagnosis of Diseases of Stomach. F. W. Strauch.—p. 307. Cont'd. Idem. J. Dillon.—p. 308.
Staining of Diphtheria Bacilli. J. Stoltenberg.—p. 309.
Survey on Infectious Diseases. O. Moog.—p. 309.
Development of Pathology. T. Meyer-Steineg.—p. 311. Cont'd.
Population Statistics in Northern Europe. E. Roesle.—p. 312.
Economy in Prescribing. W. Gerlach.—p. 313.
Technicians. A. Gärtner.—p. 313.

The Regulation of Heat.—Plaut discusses the means of thermoregulation in man and animals. The physical regulation plays the most important rôle in man, while the chemical predominates in animals.

Roentgen Rays in Cancer.—Kok experimented with cancer in animals. Preventive irradiations of the whole animal with very small doses (4 per cent. of the epilatory dose) gave the best results.

Eye Disturbances in Alcoholic Intoxication.—Runge found regularly in alcoholic intoxication nystagmus and paresis of certain movements of the eyes. These symptoms appear sometimes before the ataxia, and may last for seven and even twenty-four hours.

Epidemic Gangrene of External Female Sex Organs.—Stephansky observed in Odessa twenty cases of acute gangrene of the external sex organs in little girls. Various infectious diseases had preceded the gangrene, which he considers as different from noma.

50: 359-390 (March 21) 1924

*Insulin Treatment. F. Umber and M. Rosenberg.—p. 359.
Insulin in Lipemia and Acidosis. F. Fonseca.—p. 362.

*Relativity of Action of Hormones. H. Zondek.—p. 364.
*Action of Phlorizin. L. Dünner.—p. 367
*Treatment of Visceral Syphilis. Groedel and Hubert.—p. 368.
Intraspinal Anesthesia. Hagedorn.—p. 371.
Klausner Reaction in Serodiagnosis of Syphilis. Stern.—p. 372.
Preservation of Serums and Antiserums. G. Strassmann.—p. 374.
"Etiology of Measles." R. Degkwitz.—p. 374.
"Surgical Treatment of Lisping." E. Fröschels.—p. 375.
Serodiagnosis of Acute Tuberculosis. Gittner.—p. 375.
*Corn-Flower Seeds and Appendicitis. K. Eick.—p. 375.
Treatment of Rhagadiform Eczema. W. Gent.—p. 376.
Survey of Recent Neurology. H. G. Creutzfeldt.—p. 376.
Retrenchment in Public Hygiene. F. Kirstein.—p. 378.
Hygiene and Statistics in the United States. Prinzing.—p. 379.

Insulin Treatment.—Umber and Rosenberg report their experience with 100 diabetics given insulin treatment. The results were very good, including twelve cases of coma. Only two patients with coma died. The local reactions were not infrequent and were disagreeable. One patient suffered from urticaria after every brand of the substance; another only after one preparation. Collapse due to an idiosyncrasy to tricresol was observed in one instance. The large doses of insulin (over 200 units daily) in coma have to be accompanied by a large intake (eventually infusion) of carbohydrates. Strophanthin and camphor injections should be given. They warn against epinephrin. The influence on the water balance is remarkable, and the subjective well-feeling of the patients may be due to retention of water. The theories on the action of insulin published so far solve, at the best, only a part of the problem. The action is very complex.

Relativity of Action of Hormones.—Zondek discusses the pathogenesis of endocrine diseases from this viewpoint. With his co-workers he discovered that the action of thyroxin on tadpoles may be changed (enhanced or even inverted) by different ions. In a similar way he was able to inhibit the expected increase in metabolism of dogs after 1.3 mg. of thyroxin by adding 0.3 gm. of calcium chlorid. Potassium chlorid enhanced, calcium chlorid inhibited the action of pituitary extracts. Similar experiments with insulin showed that the action does not depend on the absolute amount of the ions but on the difference between the antagonists. The action of hormones is thus reversible according to the condition of the cells on which they act. The coexistence of exophthalmic goiter with symptoms of hypothyroidism might be explained, for instance, by a relatively high concentration of calcium ions in the organs which present the symptoms of hypothyroidism.

Action of Phlorizin.—Dünner produced glycosuria with otherwise insufficient doses of phlorizin when 20 to 30 gm. of bread was ingested. The glycemia was not increased. He believes that both these substances act on the sympathetic.

Treatment of Visceral Syphilis.—Groedel and Hubert recognize general paralysis as the only contraindication of antisyphilitic treatment. Syphilitic affections of the circulatory apparatus should be treated in every stage without regard to an insufficiency of the heart. Iodin is indicated wherever the reactive proliferation causes symptoms, as in gummatous meningitis. Arsphenamin combined with mercury or bismuth is always indicated in addition. The largest dose of neo-arsphenamin should be, as a rule, 0.45 gm. and the total amount not over 3 to 4 gm. in about six weeks. Syphilis of the lungs requires larger single doses (0.6 gm.). In affections of the liver, 0.3 gm. of neo-arsphenamin is the maximum dose. They recommend two to three such series for two to three years. Mercury, and perhaps bismuth, are contraindicated in glomerulonephritis.

Corn-Flower Seeds and Appendicitis.—Eick believes that the seed of corn-flowers (Centaurea) which was found in many extirpated appendixes, may be the cause of the disease.

Medizinische Klinik, Berlin

20: 333-366 (March 16) 1924

*Fistulas. F. Pels Leusden.—p. 333.
*Nodding Spasm. J. Zappert.—p. 335.
*Clinical Action of Insulin. P. Mahler and K. Pasterny.—p. 337.
Treatment of Furuncles. G. Axhausen.—p. 340.
Inferior Hemianopia. M. Bögel.—p. 341.
Multiple Sclerosis. E. Horwitz.—p. 343.
*Action of Thallium. A. Buschke et al.—p. 345.
*Lysins of Bacillus Mycoides. H. Much and F. Sartorius.—p. 347.
Practical Gynecology. E. Runge.—p. 351. Cont'n.
Recent Literature on Disease of Heart and Vessels. Edens.—p. 352.

Fistulas.—Pels Leusden deals with the pathology and treatment of fistulas. Rest of the affected part is the main condition for closing of the fistula. Certain fistulas after high subpectoral abscesses, which have been opened incorrectly through the pectoral muscle, persist for months because they are irritated by every movement of the arm. They heal sometimes in two weeks after binding the arm fast to the chest. Wherever there is a natural way of elimination of secretions (gastro-enterostomy, pyelotomy), the secretion finds its way when given a chance. He never sutures after suprapubic prostatectomy as the fistula heals when the natural outlet is open.

Nodding Spasm.—Zappert tries to use both theories (ocular and vestibular) to explain the pathogenesis of nodding spasm. It is characterized by bowing movements, oblique position of the head, and nystagmus. Raudnitz, who first described the condition, attributed it to the weakening of the eyes in dark rooms, analogous to miners' nystagmus. Zappert admits this as an external cause, but points to the fact that it occurs only in children which had started to walk or were held upright but never in those who were already walking, or still reclining. Thus the increased function of the vestibular apparatus may play an important rôle. The condition is harmless, and the infants recover in a few months.

Action of Insulin and Garlic. — Mahler and Pasterny observed a lowering of the glycosuria and sometimes of the hyperglycemia in diabetics after ingestion of 10 gm. of raw garlic per day. In two cases the patients were refractory to insulin on two days following the garlic treatment.

Thallium Rickets in Rats.—Buschke, Klopstock and Peiser review the results of their research on the action of thallium. It caused, in all the rats, signs of hypothyroidism, alopecia, cataract, tumors in the stomach and signs of rickets. Subcutaneous implantation of small particles of the metal proved the best way to produce these disturbances. They believe that the cause is in the alkalosis induced. Lead and mercury acted in a similar way.

Lysins of Bacillus Mycoides.—Much and Sartorius produced complete lysis of typhoid, cholera and other bacilli, as well as of erythrocytes, by incubating them with a culture of Much's variety of mycoides bacillus. Berkefeld filtrates were also active. The action has but a superficial resemblance to d'Herelle's phenomenon. The antigenic properties of the dissolved bacilli were not impaired.

Monatsschrift für Geb. und Gynäkologie, Berlin

65: 258-320 (Feb.) 1924

*Intracranial Hemorrhage in the New-Born. H. Saenger.—p. 258.
*The Sedimentation Test. O. Hildebrandt.—p. 275.
*Experiences with Placenta Praevia. W. Liebe.—p. 279.
Treatment of Puerperal Fever. O. P. Mansfeld.—p. 286.
*Relations Between Syphilis and Pregnancy. F. Klee.—p. 293.
*Six Day Anuria Consecutive to Radium Treatment. A. Matusovsky.—p. 299.

Intracranial Hemorrhage in the New-Born.—Saenger found macroscopic intracranial hemorrhage in 73 of 100 new-born infant cadavers. The tentorium was intact in only 3 of 46 with much hemorrhage, and in 15 of 27 with slight hemorrhage. The straight sinus, the vertex and the tentorium veins seem the most vulnerable points, and there is usually a combination of disturbance in the circulation and direct injury from force. In 34 of the children there was no sign of life but there was meconium in the bronchi; the heart was beating in 24, but the infants could not be revived. The others survived for from one hour to three days. The after-coming head showed the gravest injuries.

The Sedimentation Test. — Hildebrandt allows forty-five minutes for sedimentation of the erythrocytes. Delay beyond this, indicates an active suppurating process somewhere. In his 150 cases, the operation always confirmed or was based on the comparative speed of sedimentation.

Placenta Praevia.—Liebe's mortality with placenta praevia since 1919 has been 1.73 per cent. of the 52 women, and 20.37 per cent. of the children. The birth proceeded spon-

taneously in 5 cases, and with the inflatable bag in one case. Braxton Hicks version was applied in 8 cases and cesarean section in 38.

Relations Between Syphilis and Pregnancy.—Klee compared the retroplacental blood with blood from the arm, and obtained a positive Wassermann reaction in 7.8 per cent. of 1,200 women. Only the retroplacental blood is dependable, revealing latent syphilis when nothing else suggested it. A tube in the vulva catches the retroplacental blood, immediately before or after expulsion of the placenta. Light pressure on the fundus aids in collecting the blood.

Anuria Consecutive to Radium Treatment.—The rapid shriveling under radium treatment after removal of cancer of the cervix had induced compression of the ureters. The six day anuria was finally conquered by gradual catheterization of the ureters. Franqué and Krömer have each reported a similar case, both fatal. In Matusovsky's patient, the left ureter was still impermeable when she left the hospital the twenty-first day.

Münchener medizinische Wochenschrift, Munich

71: 321-354 (March 14) 1924

Anthropometry of Munich Students. R. Martin and A. Alexander.—p. 321.
Antigen for Serodiagnosis of Syphilis. J. Hohn.—p. 325.
Bruck Flocculation Reaction. W. Kyrieleis.—p. 327.
*Avidity of Antitoxins. R. Kraus.—p. 329.
Serotherapy of Meningococcus Meningitis. K. Ochsenius.—p. 330.
Endemic Acute Polyarthritis. H. Herrmann.—p. 330.
Involvement of Submaxillary Glands in Chronic Tonsillitis. W. Blumenthal.—p. 332.
Test of Hearing. H. Lampert.—p. 333.
Spasmogenic Dilatation of Esophagus. H. Starck.—p. 334.
*Castration in Menstrual Psychosis. G. Ewald.—p. 336.
The Blood in Incipient Lead Poisoning. Thiele.—p. 338.
Stimulation Treatment in Rheumatic Affections. A. Menzer.—p. 338.
Hysteria. H. Curschmann.—p. 339. Conc'n.
Surplus of Births of Boys. E. Neter.—p. 340.

Avidity of Antitoxins.—Kraus admits that antibothrops serum (the lachesis snakes) may neutralize the scorpion poison, if left for an hour in vitro with it. It has, however, no curative and not even a preventive action, because the avidity of the antitoxin is too low. Specific antiscorpion serum has a preventive and even curative effect.

Castration in Menstrual Psychosis.—Ewald reports the history of a woman, aged 46, suffering from stuporous states, which recurred with each menstruation. She was castrated by roentgen rays. The menstruation stopped but the mental disturbance returned at the same regular intervals as before. Two years later both ovaries were removed, and after another year, the uterus. The psychosis still returned at about the same intervals.

Wiener Archiv für innere Medizin, Vienna

7: 443-612 (March 10) 1924

*Cerebral Obesity and Genital Atrophy. W. Raab.—p. 443.
Paralytic Hemoglobinuria. F. Paul.—p. 531.
*Pulmonary Circulation During Respiration. J. Kretz.—p. 555.
*Abderhalden Reaction. F. Högler and F. Serio.—p. 571.
Eosinophilia in Vitro. A. Neumann and B. Zimonjic.—p. 587.

Cerebral Obesity and Genital Atrophy.—Raab observed forty-three patients with cephalic obesity or hypogenitalism. He prefers this term to dystrophia adiposogenitalis because he believes, with Biedl, that the symptoms may be caused either by an affection of the pituitary gland, or of the brain centers, or of the communication between them. The height of the dorsum sellae in some patients might speak for the latter possibility. In one case the pituitary gland seemed to be the only organ affected. Dystrophia adiposogenitalis is not a uniform syndrome. Each of its component elements may occur isolated. It seems that the centers for the genital organs are on the floor of the third ventricle, nearer to the pituitary gland, while the obesity depends on centers in the tuber cinereum near the mamillary bodies.

Pulmonary Circulation During Respiration.—Kretz examined the influence of respiratory movements on the blood stream in the perfused lungs of animals. The beginning inspiration increased the amount of fluid flowing from the veins, while the expiration decreased it. Increased frequency of respiration increased the blood flow, deep respiration decreased it.

Abderhalden Reaction.—Högler and Serio examined the serum of 300 patients for the presence of ferments, using the refractometric modification of Abderhalden's reaction. The pathologic serums were as a rule more active than the controls. Yet the results were not sufficiently reliable to be of diagnostic value.

Wiener klinische Wochenschrift, Vienna

37: 281-304 (March 20) 1924

*Diphtheria Antitoxin in Tissues. K. Kassowitz.—p. 281.
*Salzer's Treatment of Lye Poisoning. J. v. Bókay.—p. 282.
*Primary Suture of Tendons. H. Porges.—p. 285.
*Etiology of Warts. B. Lipschütz.—p. 286.
Rupture of Uterus After Cesarean Section. Heidler.—p. 288.

Distribution of Diphtheria Antibodies Between Tissue and Serum in Passive and Active Immunity.—Kassowitz observed recurrences of diphtheria between the tenth and sixteenth day after an injection of antitoxin. The blood of these patients still contained some antitoxin, but the Schick test was positive, indicating that the tissues were not protected. He determined the concentration of antitoxin in the tonsils extirpated after antitoxin injections, and washed free of blood. In the first days the tonsils contained a large amount of antitoxin. From the thirteenth day onward he could not find any, while the blood serum still contained antitoxin. It was present in the tonsils removed from actively immune persons. He points out the shortness of the period of protection conferred by a mere passive immunization, and recommends reinjections of the antiserum after one week in patients with severe diphtheria.

Salzer's Treatment of Lye Poisoning.—Bókay used Salzer's method of prevention of esophagus strictures after lye poisoning in 132 children, mostly under 3 years of age. Salzer introduces daily a thick tube (No. 30) beginning from the second to the sixth day after the lye has been swallowed. Later, the intervals may be prolonged. The results of this early introduction of the large tube surpassed all expectations. Neglect to apply this early treatment borders on malpractice.

Primary Suture of Tendons.—If the severed tendons are retracted, Porges injects 5 to 10 c.c. of a 0.5 per cent. solution of procain into the muscle. Immediately afterward the tendon can be drawn out about 2 cm. farther than before.

Etiology of Warts.—Lipschütz describes his cytologic findings in beginning warts. He believes that the inclusions in the nuclei of certain cells are due to chlamydozoa.

37: 305-328 (March 27) 1924

Treatment of Pleural Empyema. K. Nather.—p. 305.
Course of Congenital Syphilis. Nobl and Remenovsky.—p. 306. Cont'd.
*Surgery of Intermittent Claudication. Schlesinger.—p. 309.
*Vulvar Pruritus. P. Werner.—p. 311.
Tuberculin Ointment in Diagnosis. H. Maendl.—p. 313.
Malaria and Articular Rheumatism. L. Lichtenstein.—p. 315.
Andreatti's Tuberculosis Therapy. J. B. Andreatti.—p. 316.

Surgery of Intermittent Claudication.—Schlesinger recommends Leriche's periarterial sympathectomy in grave cases of ulceration on the lower extremities or in claudication due to angiospasm. He reports two cases treated advantageously by this method.

Pruritus Vulvae.—Recently the problem of pruritus vulvae has been considered from the standpoint of a possible endocrine origin, connected especially with the ovaries. The disturbance appears in many cases only in the time of menstruation, and thus it seems impossible to deny some causal link between these phenomena. Treatment consists first in administering ovary substance because the disturbance is peculiarly liable to occur in the climacteric phase. Roentgen-ray treatment of the vulva probably does not relieve by destroying the nerve terminals, but through influencing by certain wandering rays the ovaries proper.

Zeitschrift für Kinderheilkunde, Berlin

37: 245-362 (March 7) 1924

*The Facialis Sign in Children. M. Eckert.—p. 245.
Chlorid Content of the Blood in Infants. H. Vollmer.—p. 252.
*Daily Variations in Weight. Putzig and Vollmer.—p. 259.
Disinfection of the Urinary Tract. H. Langer.—p. 271.
*Steeple Skull in Children. P. Reyher.—p. 283.
Growth of Children Since the War. E. Schlesinger.—p. 311.
Pemphigus in Measles. G. Selbiger.—p. 325.

Acetone Production in the New-Born. Schick and Wagner.—p. 336.
"Alternating Stimulus Therapy in Pediatrics." C. Coerper.—p. 344.
Hypertrophy of Pylorus Without Pylorospasm. K. Keilmann.—p. 349.
Antileukocidin in Maternal and Infant Serum. Tobler.—p. 354.

Chvostek's Sign in Childhood.—Eckert made an investigation on 13,854 school children in Austria (6,573 boys, 7,281 girls) to determine the behavior of the facialis phenomenon. It has been regarded as a sign of defective vital force, due to impoverishment of the tissues in calcium. She found that in Vienna a positive reaction was obtained in 22.8 per cent. of the boys and 20.1 per cent. of the girls, while in rural districts this percentage was lower. It was lowest in province capitals (7.1 per cent. and 7.8 per cent., respectively). Children being treated on the roof of the Children's Hospital, and thus permanently exposed to fresh air, presented the facialis phenomenon less frequently than other Vienna children.

Daily Variations of Weights and Temperature in Infants.—Putzig and Vollmer conclude from their research on the interrelation between body weight and temperature in infants, that their physiologic daily alterations are not connected with the diurnal change of day and night, but with the alternation of waking and sleep. There does not seem to exist any direct causal connection between weight and temperature.

Premature Obliteration of the Cranial Sutures.—Reyher reports the case of a girl, 3 years old,, with brachycephalic steeple skull. Owing to the premature ossification of the cranial sutures and the consequent increased intracranial pressure, neuritic atrophy of both optic papillae had started to develop. There was also a remarkable exophthalmos. After an occipital decompressive trephining operation, the exophthalmos subsided at once, and visual acuity has materially improved during the year since.

Zeitschrift für klinische Medizin, Berlin

99: 329-548 (March 20) 1924

*Sedimentation Test and the Globulins. A. Salomon.—p. 329.
Arneth Leukocyte Count in Pneumonia. Arneth and Albacht.—p. 337.
*Psychotherapy of Spastic Conditions. E. Moos.—p. 371.
Cholesterol in Pleuritic Exudates. K. Krafczyk.—p. 391.
Uricacidemia and Kidney Function. E. Mendel.—p. 400.
*Treatment with Ultraviolet Rays. M. Levy.—p. 407.
Two Types of Chronic Polyarthritis. P. Schober.—p. 416.
Albuminuria and Blood Proteins. Kollert and Starlinger.—p. 426.
Dysenteriform Meat Poisoning. Rosenblath.—p. 442.
*Iron Preparations. F. Fischler and T. Paul.—p. 447.
*Cardiac and Endocrine Factors in Diuresis. F. Groedel and G. Hubert.—p. 486.
The Blood in Experimental Nephritis. J. Mosonyi.—p. 500.
*Tuberculin Treatment and Sedimentation Test. J. Stukowski.—p. 506.
Isohemagglutination and Extinction Phenomenon in Scarlet Fever. L. Jacobowitz.—p. 515.
*Isohemagglutination. S. Kirihara.—p. 522.

Sedimentation Test and the Globulins.—Salomon found a distinct parallelism between the relative amount of globulin in the serum and the speed of sedimentation of erythrocytes.

Psychotherapy of Spastic Conditions.—Moos reports several cases of spasm of the esophagus or colon. The usual treatment (atropin, etc.) gave no results. The patients recovered after psychotherapy or psychanalysis.

Treatment with Ultraviolet Rays.—Levy found histologic changes in the hemopoietic and other organs of animals irradiated with ultraviolet rays.

Iron Preparations.—Fischler and Paul discuss the physiologic properties of iron preparations. Inorganic compounds of the metal can be resorbed. If the compounds are too strongly ionized, a local corrosive action might occur. If the iron is bound too firmly, as in some of the favorite organic combinations, it may pass unabsorbed through the bowel. Blaud's pills and salts of organic oxyacids are useful.

Cardiac and Endocrine Factors in Diuresis.—Groedel and Hubert confirm the influence of cardiac decompensation on the results of the diuresis test.

Tuberculin Treatment and Sedimentation Test.—Stukowski found in tuberculous persons with an increased sedimentation speed, a retarding of the sedimentation within a day or two after inunction with a tuberculin ointment. Subcutaneous injection of tuberculin may increase the speed.

Isohemagglutination.—Kirihara was able to determine the grouping by the blood corpuscles of the new-born, but not usually by their serum. The agglutinins are present only when the baby belongs to the same group as the mother. Various exudates and transudates contain smaller quantities of iso-agglutinins than the serum. The average A:B index in 948 Koreans was lower than in Japanese (1.1 against 1.7). He confirmed on 139 families (611 persons) Dungern's heredity rules. The demonstration of groups in extracts from dried blood stains was not always reliable. The attempts to produce specific antiserums with the serum and blood corpuscles from different groups failed.

Zeitschrift für Urologie, Leipzig

18: 129-192, 1924

*Retention of Urine and Blood Pressure. Oppenheimer.—p. 144.
Malakoplakia of the Bladder. E. Oppermann.—p. 164.
The Schweigger-Seidel Part of the Renal Tubule. Armbruster.—p. 171.

Retention of Urine and the Blood Pressure.—Oppenheimer investigated the changes in blood pressure in chronic retention of urine. His observations and experiments convinced him that the elastic pressure in the bladder, but not the amount of fluid in it, increases by a reflex the blood pressure. Spasm of the bladder raises the pressure even if the bladder is empty and the individual healthy. The reaction is more pronounced in infected patients than in aseptic conditions. Experimental overfilling of the kidney pelvis induces a rise in the blood pressure. Several other observations speak also for the origin of this reflex hypertension in the small arteries of the kidneys.

Zentralblatt für Chirurgie, Leipzig

51: 329-372 (March 1) 1924

Denaturation of Alcohol. G. Perthes.—p. 329.
Resection for Rachitic Curvatures. P. Drevermann.—p. 331.
Surgery of Rachitic Curvature. M. Hackenbroch.—p. 333.
Pump for Aspiration of Wound Secretions. A. Beck.—p. 334.
*Periarterial Sympathectomy and Bone Tuberculosis. W. Gundermann.—p. 336.
An Unintentional Sympathectomy. E. Liek.—p. 339.
Tardy Recurrence of Appendicitic Abscess. K. Koch.—p. 340.
Juvenile Osteochondritis Deformans. H. Blencke.—p. 344.
Suprapubic Prostatectomy. P. F. Müller.—p. 346.
Braun's Fracture Splint and Schmerz' Suspension Apparatus. L. Böhler.—p. 347.

51: 461-652 (March 15) 1924. Supplementary Number

Fat Embolism After Osteotomy. M. Kirschner.—p. 465.
To Combat Muscular Atrophy After Injury. A. Dzialoszynski.—p. 466.
Sedimentation Test in Peritonitis. P. vom Dahl.—p. 471.
*Postoperative Tetany. R. Syring.—p. 474.
The Catgut Question. J. Fürle.—p. 478.
*Injection of Alcohol into Animal Brain. Koljubakin and Uroda.—p. 482.
Posttyphoid Disease of Costal Cartilage. Dervisseur.—p. 483.
Mammary Plastics. O. Kleinschmidt.—p. 488.
Palliative Pylorus Resection. E. Kreuter.—p. 493.
Treatment of Pernicious Gastric Ulcer Hemorrhage. C. Ramstedt.—p. 494.
A Primary Sarcoma in the Small Intestine. T. Hnidei.—p. 496.
Appendicolysis. F. Dergane.—p. 499.
Foreign Body Appendicitis. C. Schroeder.—p. 500.
Transduodenal Drainage in Occlusion of Common Duct. M. Cohn.—p. 502.
Osteomalacia of the Semilunar Bone. W. Hering.—p. 505.
Incomplete Osteotomy for Coxa Vara. C. Rohde.—p. 507.
Surgery of Fracture of Femur Neck. Meyer.—p. 511.
Perforation of Femoral Artery After Periarterial Sympathectomy. W. Milkó.—p. 513.
Fibromatous Knee Joint Capsule. E. Sonntag.—p. 515.

Periarterial Sympathectomy in Surgical Tuberculosis.—Gundermann reports six cases of grave bone and joint tuberculosis in which periarterial sympathectomy was followed by complete recovery in three and nearly complete in all the others, except one with complicating ulcerating pulmonary tuberculosis. The curative mechanism of sympathectomy is probably to be ascribed to the hyperemia, lasting for several months, following the operation.

Postoperative Tetany.—Syring reviews his seventeen cases of tetany in 600 operations for goiter. He recommends to test previously the patients' predisposition to insufficiency of the parathyroids. In this case, thyroidectomy should be preceded by ligating only three, instead of four arteries, as in other conditions. The after-treatment consists in administering large doses of parathyroid tablets (eighteen a day) and calcium preparation or food containing much calcium, such as milk.

Injections of Alcohol into the Animal Brain Cortex.—The great drawback to operations on the cortex in jacksonian

epilepsy has been the liability of the raw surfaces to grow together. The cortex becomes adherent to the meninges, and this adhesion provides a new cause for epileptic spasms. To prevent this, Koljubakin and Uroda recommend injection of alcohol into the cortex through a trephine opening. Animal experiments have proved that the operation is excellently borne, and that no secondary adhesion of the structures occurs. Histologically, all the cortical cells in the area of the injection were found utterly degenerated, except the neuroglia.

Zentralblatt für innere Medizin, Leipzig

45: 201-228 (March 22) 1924

*Means to Influence the Circulation. C. Popescu-Inotesti and G. Gabriel. —p. 202.

Influence of Deprival of Oxygen and Excess of Carbon Dioxid on the Blood and Circulation.—Summing up their physicochemical experiments, Popescu-Inotesti and Gabriel state that by diminishing the oxygen partial pressure in the inspiration air, the red blood corpuscle count ascends in the anemic, while it remains stationary in the normal; and the blood pressure drops in the normal and in subjects with hypertension. Accumulation of carbon dioxid raises the blood pressure.

Casopis lekaruv ceskych, Prague

63: 473-508 (March 22) 1924

Autosynnoia: a Type of Autism. A. Heverоch.—p. 473. Cont'd.
Clonic and Tonic Contraction. J. Belehrádek and J. Vitek.—p. 477.
*Functional Heart Murmurs. E. Kovárícek.—p. 481.
Lymphosarcoma of Nasopharynx. Hofnicek.—p. 485. Conc'n.
Sclerema in Moravia. Ninger.—p. 487. Conc'n.

Functional Heart Murmurs.—Kovárícek observed a systolic murmur near the sternum in the second left intercostal space in many soldiers. The murmur was of a rubbing character, was most distinct in the maximal expiratory position, and disappeared during inspiration. He believes that the mediastinocostal sinus is a predilection point for fibrinous pleurisy. In persons with subsequent thickening of the pleura, the movements of the base of the right ventricle may cause such rubbing sounds. The murmur occurs more frequently with paralytic thorax. General symptoms of neurasthenia are frequent. The sign should draw attention to the possibility of tuberculosis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1265-1480 (March 22) 1924

Roentgenologic Analysis of Forty Gastric and Duodenal Ulcers. L. Arisz.—p. 1266.
*Stain for Glycogen. H. C. Voorhoeve.—p. 1291.
Caput Succedaneum Preventing Delivery. T. S. Klots.—p. 1295.
*The Asthma Sputum Flora. J. Koopman.—p. 1299.
Unilateral Paralysis of Accommodation. H. J. Flieringa.—p. 1302.

The Vastarini-Cresi Stain for Glycogen.—Voorhoeve extols this fuchsin technic, which he describes in detail, as yielding excellent results, while it is simpler than the Best method, and the preparations can be kept a long time. A colored plate shows the remarkable findings in a rat liver.

Asthma Sputum.—Koopman cultivated streptococci from the sputum in 11 of 30 cases of asthma; staphylococci in 27; pneumococci in 14; *Micrococcus catarrhalis* in 21, and tetragenes and Friedländer bacillus in 2 each. Koopman saw no benefit from vaccine therapy of asthma in 30 cases, nor from tuberculin treatment, but Hekman on a basis of 300 cases advocates autogenous vaccine therapy. Willemsen and others sustain him in this, and there is considerable evidence on record to prove that asthma sputum has certain peculiar properties.

Hospitalstidende, Copenhagen

67: 97-112 (Feb. 13) 1924

*Peyton Rous' Chicken Sarcoma. V. Ellermann.—p. 97.
*Compression of Lung with Fat Tissue. R. Steenstrup.—p. 103.

Peyton Rous Infectious Chicken Sarcoma.—Ellermann describes positive results in two of three experiments with the filtrate, and in one of two with desiccated tumor substance. There could be no question as to the malignant nature of the tumor that developed, and he accepts a living virus as responsible for it.

Plugging the Lung with Fat Tissue.—In the first of Steenstrup's two cases, the expectoration, with tubercle bacilli, kept up after thoracoplasty. Finally, a clinical cure was realized by detaching the parietal pleura from the chest wall, opposite the apex, thus obtaining a cavity of about the same size as what was left of the original large cavity. A flap of fat tissue with adherent fascia was cut from the abdominal wall and introduced, partly doubled, into the artificial cavity, the fascia side inward. This squeezed the walls of the original cavity together, and clinical healing was soon complete. In the other case, conditions were not feasible for thoracoplasty, and a flap of fat 7 by 6 by 4 cm. was introduced into the cavity made by detaching the pleura opposite the tuberculous process. This answered the purpose; expectoration had nearly entirely subsided in three months. In this case two small drains were left for a few days after the apicolysis.

67: 113-128 (Feb. 20) 1924

Cultivation of Epithelium in Artificial Medium. Fischer.—p. 113.
*Alkaptonuria. L. Vøhtz.—p. 121. Conc'n, p. 129.

Alkaptonuria.—Vøhtz says that only 110 cases of alkaptonuria have been published in accessible literature since the first description in 1859; he adds another case to the list. His patient was a boy, aged 4, and he tabulates the metabolic findings with and without casein in the food, comparing them with others on record. Rickets or tuberculosis is exceptionally frequent in the family histories, but the alkaptonuria was evidently the primary anomaly. He advises restricting the intake of albumin and especially of casein, and special care to avoid injury of joints. In case arthritis develops, potassium iodid might be tried, as Søderbergh has found that this reduces the output of homogentisinic acid. Vøhtz has confirmed the sterilizing action of homogentisinic acid, and he suggests this might be utilized by intravenous administration in treatment of general or urinary infections.

67: 129-144 (Feb. 27) 1924

Insulin Arrests Diabetic Coma in Child. E. Rosling.—p. 139.

67: 145-160 (March 5) 1924

*Peptic Ulcer. E. Petersen.—p. 145. Conc'n.—p. 161.

Peptic Ulcer Twice.—The first peptic ulcer developed four years after posterior gastro-enterostomy. The sailor returned two years later with a perforated peptic ulcer. Petersen suggests that the lesser frequency of peptic ulcer after resection may be due merely to the achylia entailed by the resection. The after-care, dieting and alkaline treatment, is too often neglected or not kept up systematically long enough. He quotes Haberer's dictum that ulcer patients should be sent to the surgeon first, and then given medical treatment after the surgeon has operated.

67: 161-176 (March 12) 1924

*Cultivation of Cancer Cells Outside the Organism. A. Fischer.—p. 169.

Cultivation of Sarcoma Cells Outside of the Organism.—Fischer has succeeded in cultivating cells from Rous' chicken sarcoma in an artificial medium by placing scraps of muscle tissue from a healthy hen in the medium, in contact with the sarcoma scrap. The sarcoma cells invade the muscle tissue and grow luxuriantly in it, until the muscle tissue is entirely destroyed. When this happens, a fresh scrap of muscle must be supplied, and the invasion proceeds anew. By this it seems possible to keep sarcoma cells alive outside the organism for an indefinite period (five months to date), and the growth is as active as at first.

Ugeskrift for Læger, Copenhagen

86: 265-286 (March 27) 1924

*Insulin Treatment of Diabetes. K. Faber.—p. 265.
Opisthotonus in Lumbago. O. Hamburger.—p. 269.
"Lumbago." H. Jessen.—p. 271.
Denmark's Supply of Insulin. K. L. G. Andresen.—p. 271.

Insulin Treatment of Diabetes.—Faber remarks that the questions now pressing for solution are: how mild the diabetes can be to render insulin unnecessary; the differences in technic and results at different ages; the by-effects, and the prospects of durable improvement.